

March 11, 2021

**Attn:** Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy

**Re:** Energy Conservation Program: Procedures for Use in New or Revised Energy Conservation Standards and Test Procedures for Consumer Products and Commercial/Industrial Equipment; Prioritization Process

**Docket No.:** EERE-2020-BT-STD-0004

The Institute for Policy Integrity (“Policy Integrity”) at New York University School of Law<sup>1</sup> respectfully submits these comments to the Department of Energy (“DOE”) on prioritizing future energy conservation rulemakings under the procedure set by the 2020 revisions to the Process Rule.<sup>2</sup> Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy.

To begin, DOE should **prioritize repealing and replacing the 2020 revisions to the Process Rule**, and the related changes to the procedures for evaluating statutory factors, as directed by Executive Order 13,990.<sup>3</sup> Many of those revisions—particularly the establishment of significance thresholds—were arbitrary and will undercut the efficient setting of future energy conservation standards going forward, as explained in Policy Integrity’s attached comments on those rule revisions.

The *List of Agency Actions for Review* published on January 20, 2021 contains additional recent DOE rulemakings that should also be prioritized for revision or repeal.<sup>4</sup> Of that list, in addition to prioritizing those rulemakings for which revision or repeal could deliver the most net benefits to social welfare—a main principle for future prioritization, as described below—DOE should also consider **prioritizing the revision or repeal of recent rulemakings that contain arbitrary legal interpretations**. For example, the recent rules on dishwashers, washers/dryers, and lightbulbs appearing on that list<sup>5</sup>—as well as additional rules, such as on showerheads<sup>6</sup> and furnaces<sup>7</sup>—contain problematic interpretations of product classes and features that both are legally wrong and could interfere with DOE’s future rulemaking efforts. See Policy Integrity’s attached comments on lightbulbs for further details on why such interpretations are arbitrary. If the arbitrary legal interpretations in recent rulemakings pose hurdles for DOE’s future rulemaking efforts, the revision or repeal of such rules should be prioritized.

Moving forward, DOE should **use cost-benefit analysis** to help prioritize future energy efficiency standards, focusing on those standards where the biggest net gains in social welfare are most likely. However, DOE should not close the door on other smaller, but still net beneficial, opportunities for efficiency gains. This is especially true if certain rules, while achieving smaller overall energy savings, may be important to **advance distributional fairness**. In considering costs and benefits, DOE should

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<sup>1</sup> This document does not purport to present New York University School of Law’s view, if any.

<sup>2</sup> 86 Fed. Reg. 10,211 (Feb. 19, 2021).

<sup>3</sup> Exec. Order 13,990 § 2(a)(iii), 86 Fed. Reg. 7038 (Jan. 25, 2021) (targeting the review of 85 Fed. Reg. 8626 (Feb. 14, 2020) and 85 Fed. Reg. 50,937 (Aug. 19, 2020)). Similarly, DOE should prioritize revising the other rules listed in that Executive Order.

<sup>4</sup> Available at <https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/fact-sheet-list-of-agency-actions-for-review/>.

<sup>5</sup> *Id.*

<sup>6</sup> 85 Fed. Reg. 81,341 (Dec. 16, 2020).

<sup>7</sup> 86 Fed. Reg. 4776 (Jan. 15, 2021).

focus not just on consumer savings, but on **all environmental and public health effects, including indoor air quality and effects with environmental justice implications.**

DOE should review the Fall 2020 agenda, including rulemakings relegated in the agenda to the “long-term actions” category, as well as suggestions from public commenters, and prioritize the energy conservation standards that will deliver the greatest net public benefits or advance distributional equity.

From the “long-term actions” category, DOE should also **consider reviving its exploration of implementing a market-based approach** to the energy conservation program.<sup>8</sup> Because market-based approaches like averaging, banking, and trading can lower marginal compliance costs, implementing market-based approaches for certain appliance categories could help DOE justify increasing energy conservation standards in ways that will deliver greater net benefits to consumer savings, public health, and the environment.

We elaborate on these points in turn below.

#### **I. DOE Should Prioritize Rules That Will Deliver the Greatest Net Benefits to the Public or Advance Distributional Equity**

DOE should use cost-benefit analysis to prioritize rulemakings that would result in the greatest net gains for society. However, DOE should also continue to promulgate energy efficiency standards that would result in smaller, but still overall positive, net gains. This is especially true if certain rules may be important to advance distributional fairness. For example, even if the total energy savings achievable from some energy efficiency increases may appear relatively small, if such savings would accrue to “disadvantaged, vulnerable, or marginalized communities,” advancing such standards could help “ensure that regulatory initiatives appropriately benefit” such communities.<sup>9</sup> For some communities, the operating costs of certain appliances could constitute a disproportionate share of their budgets. Similarly, certain energy efficiency increases could deliver environmental justice benefits that could merit prioritization (see the next section on indoor air quality and environmental justice effects).

The 2020 revisions to the Process Rule would improperly shut out many policies for which expected benefits still outweigh costs, resulting in foregone benefits and lower overall social welfare. In any future revisions to the Process Rule, DOE should avoid setting arbitrary “significance thresholds” for rulemaking. When DOE proposed such a threshold in 2019, Policy Integrity explained that these changes “violate[d] both DOE’s statutory mandate and the principles of rational rulemaking.”<sup>10</sup> The thresholds restricted DOE to pursuing an energy conservation standard only when the standard resulted in: (1) at least 0.5 quads in energy savings (reduced slightly to 0.3 quads in the final rule), or (2) a 10% reduction in energy consumption, over a 30-year analysis period.<sup>11</sup> As Policy Integrity noted, these restrictions on efficiency improvements “[made] no economic sense and [were] contrary to congressional intent.”<sup>12</sup> If such a standard had been previously on the book, for example, it would have blocked at least 23 of

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<sup>8</sup> RIN 1904-AE11; 82 Fed. Reg. 56,181 (Nov. 28, 2017).

<sup>9</sup> See Presidential Memorandum on Modernizing Regulatory Review § 1(b)(ii) (Jan. 20, 2021).

<sup>10</sup> Policy Integrity’s Comments on Notice of Data Availability for the Process Rule (submitted August 9, 2019), *available at* [https://policyintegrity.org/documents/Institute\\_for\\_Policy\\_Integrity\\_DOE\\_Process\\_Rule\\_NODA\\_Comments.pdf](https://policyintegrity.org/documents/Institute_for_Policy_Integrity_DOE_Process_Rule_NODA_Comments.pdf) [hereinafter Comments on Notice of Data Availability].

<sup>11</sup> Energy Conservation Program: Procedures, Interpretations, and Policies for Consideration of New or Revised Energy Conservation Standards for Consumer Products, 84 Fed. Reg. 36,037, 36,038 (July 26, 2019).

<sup>12</sup> Policy Integrity’s Comments on Proposed Procedures for Use in New or Revised Energy Conservation Standards and Test Procedures for Consumer Products and Commercial/Industrial Equipment, *available at* [https://policyintegrity.org/documents/DOE\\_Process\\_Rule\\_Comments\\_2019.5.6\\_final.pdf](https://policyintegrity.org/documents/DOE_Process_Rule_Comments_2019.5.6_final.pdf).

DOE's previously enacted standards, resulting in a cumulative net loss of tens of billions in consumer benefits—and over \$7 billion in foregone climate benefits—by DOE's own calculations.<sup>13</sup>

Continuing to enforce these thresholds, which have no empirical basis in fact, would be antithetical to the aims of statutes like the National Energy Policy and Conversation Act. As the U.S. Court of Appeals for the D.C. Circuit held, Congress did not intend for DOE to pass up “cost-free chance[s] to save energy,”<sup>14</sup> but the significance thresholds added by the 2020 revisions to the Process Rule create this exact risk by barring standards without considering their individual costs and benefits. Consequently, DOE should not base its prioritization of future energy conservation standards on the arbitrary significance thresholds added by the 2020 revisions to the Process Rule.

The 2020 Process Rule's use of percent comparisons in determining a standard's “significance” is also misleading and unjustifiable: what matters is the *actual contribution* to social costs and benefits. The U.S. Court of Appeals for the Fifth Circuit observed in a 2019 ruling that a “very small portion” of a “gargantuan” total effect may nevertheless “constitute[ ] a gargantuan [effect] on its own terms.”<sup>15</sup> Small percentage reductions in energy consumption may result in massive social gains, but these gains could be lost if the agency irrationally adheres to an arbitrary 10% reduction threshold.

Contrary to the assumption implicit in the 2020 Process Rule, there is no specific numerical threshold at which energy savings suddenly and obviously stop being “significant.” The U.S. Supreme Court has indicated that comparative terms like “significant,” “minimize,” or “reasonable,” all of which “admit[ ] of degree,” should be assessed by comparing costs and benefits, because “whether it is ‘reasonable’ to bear a particular cost may well depend on the resulting benefits.”<sup>16</sup>

Thus, rather than prioritize standards that meet these “significance thresholds,” DOE should focus on the actual social benefits of potential standards. In particular, DOE should pursue both future rulemakings that are expected to result in large net benefits to society, and future rulemakings that will advance distributional goals by “appropriately benefit[ing]” disadvantaged, vulnerable, or marginalized communities.

## **II. DOE Should Expand Its Focus on Costs and Benefits to Consider All Environmental and Health Effects—Including Indoor Air Quality and Environmental Justice Effects.**

When conducting its cost-benefit analyses, DOE should consider important yet hard-to-quantify effects in addition to monetizable costs and benefits. In other words, DOE should balance *all* costs and benefits of energy efficiency—not just savings to consumers or burdens on manufacturers, but also improvements to the environment and public health.

Title III of the Energy Policy and Conservation Act of 1975 instructs DOE to consider a variety of factors when setting efficiency standards, including: the economic impact of a proposed standard on manufacturers and consumers, the cost and energy savings associated with the standard, impacts on product performance, effects on market competition, and the *need for national energy conservation*.<sup>17</sup> DOE has acknowledged that this last factor typically entails analysis of environmental benefits, such as reductions in greenhouse gas emissions and air pollution, as well as impacts on grid reliability and

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<sup>13</sup> See Comments on Notice of Data Availability. The spreadsheet cataloguing the net benefits of the rules is available at: <https://docs.google.com/spreadsheets/d/1fMLi6mdl1AQqPZP6Pwd5XihnpfwVvTj8Hs3R8vbcl0Y/edit#gid=0>.

<sup>14</sup> *NRDC v. Herrington*, 768 F.2d 1355, 1374 (D.C. Cir. 1985) (“We think it unlikely that the Congress that enacted NECPA and its four related energy statutes intended DOE to throw away a cost-free chance to save energy unless the amount of energy saved was genuinely trivial.”).

<sup>15</sup> *Southwestern Electric Power Co. v. EPA*, 920 F.3d 999, 1032 (5th Cir. 2019).

<sup>16</sup> *Entergy Corp. v. Riverkeeper, Inc.*, 556 U.S. 208, 219, 225-26 (2009).

<sup>17</sup> 42 U.S.C. § 6295(o)(2)(B)(i)(I)–(VII).

national security.<sup>18</sup> The U.S. Court of Appeals for the Seventh Circuit has agreed with this interpretation, concluding that “the expected reduction in environmental costs *needs to be taken into account*” when “determin[ing] whether an energy conservation measure is appropriate under a cost-benefit analysis.”<sup>19</sup>

These environmental and public health benefits should be given consistent weight in cost-benefit analysis. Environmental and health considerations should not be an afterthought, taking a back seat to the consideration of “adverse economic impacts” on small businesses, market competition, or consumer convenience—as the 2020 revisions to DOE’s rulemaking process would require.<sup>20</sup> Although the statute clearly instructs DOE to weigh these adverse impacts to businesses and market competition when assessing whether a standard is economically justified,<sup>21</sup> the statute does *not* permit DOE to pick and choose which factors it wants to give controlling weight in any determination. The way to ensure that these all benefits are properly weighed is to engage in a thorough and transparent cost-benefit analysis that does not allow one impact to override all others.

One factor that rigorous cost-benefit analyses should take into consideration is the effect of new energy standards on indoor air quality. EPA studies have indicated that indoor levels of air pollution may be anywhere from 2 to 100 times higher than outdoor levels—a finding that is especially concerning in light of the fact that most people spend about 90% of their time indoors.<sup>22</sup> Many health effects associated with poor indoor air quality may not occur until years after exposure has occurred, and “these effects, which include some respiratory diseases, heart disease and cancer, can be severely debilitating or fatal.”<sup>23</sup>

Therefore, the positive and negative effects of new efficiency standards on indoor air quality are especially important to consider. Such indoor air quality effects will be more important to examine in connection with the use of certain fuel sources, such as appliances that directly combust fossil fuels. Even though there is some difficulty associated with quantifying or monetizing these indoor air quality-related health effects, the impacts on public welfare are real nonetheless. DOE should quantify such effects to the extent possible, and then qualitatively but “fully” account for any other impacts “that are difficult or impossible to quantify.”<sup>24</sup> Failure to do so would amount to overweighting one subset of costs and benefits at the expense of another—an act that would be inconsistent with the text and the purpose of the DOE’s enabling statute.

Indoor air quality effects may also disproportionately fall on certain communities, and DOE should consider the environmental justice implications of its standards. Similarly, by reducing electricity demand, energy conservation standards may benefit certain fence-line communities that are disproportionately exposed to the pollution from power plants, and such environmental justice gains should be considered in prioritizing and setting standards as well.

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<sup>18</sup> See, e.g., Energy Conservation Program: Energy Conservation Standards for General Service Incandescent Lamps, 84 Fed. Reg. 46,830, 46,835 (Sept. 5, 2019).

<sup>19</sup> *Zero Zone, Inc. v. Dept. of Energy*, 832 F.3d 654, 677 (7th Cir. 2016) (emphasis added). When interpreting nearly identical statutory language in the EPCA, which applies to the Department of Transportation’s setting of vehicle efficiency standards (“the need of the United States to conserve energy”), the U.S. Court of Appeals for the D.C. Circuit observed in 1988 that the Department of Transportation has interpreted that language as “*requir[ing]* consideration of . . . environmental . . . implications,” *Pub. Citizen v. Nat’l Highway Traffic Safety Admin.*, 848 F.2d 256, 263 n.27 (D.C. Cir. 1988) (R.B. Ginsburg, J.) (quoting 42 Fed. Reg. 63,184, 63,188 (Dec. 15, 1977) and adding emphasis to the word *requires*).

<sup>20</sup> 85 Fed. Reg. 8483, 8486 (Feb. 14, 2020).

<sup>21</sup> 42 U.S.C. § 6295(o)(2)(B)(i)(I)–(V).

<sup>22</sup> See <https://www.epa.gov/iaq-schools/why-indoor-air-quality-important-schools>.

<sup>23</sup> See <https://www.epa.gov/indoor-air-quality-iaq/introduction-indoor-air-quality>.

<sup>24</sup> Presidential Memorandum on Modernizing Regulatory Review § 1(b)(i).

In short, DOE should engage in rigorous and transparent cost-benefit analyses and distributional analyses that do not neglect to consider the impacts of efficiency standards on environmental health, public welfare, and environmental justice.

### III. DOE Should Revive Its Exploration of Implementing a Market-Based Approach to the Energy Conservation Program

On November 28, 2017, DOE published a request for information on implementing a market-based approach to the energy conservation program. Many industry associations submitted comments asking DOE to abandon the idea,<sup>25</sup> and DOE has listed the rulemaking in the Fall 2020 agenda as “long-term action” with no defined next step.<sup>26</sup>

In March 2018, Policy Integrity submitted comments (also attached)<sup>27</sup> explaining why the idea of market-based flexibilities—which have been successfully implemented for motor vehicles and other regulated products—merits further exploration as applied to DOE’s energy conservation program. While the comments noted that the potential cost-saving efficiencies that might be achieved through averaging, banking, and trading were not necessary to justify the further tightening of many current energy conservation standards, by reducing marginal compliance costs “it is possible that market-based flexibilities could *justify even greater improvements* to energy efficiency standards.”<sup>28</sup> Because market-based flexibilities could potentially both reduce marginal compliance costs and deliver greater net social benefits, it is worth DOE further considering the legal and implementation issues that would be involved in piloting or implementing a market-based program.<sup>29</sup>

Respectfully submitted,

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#### Attachments:

Policy Integrity’s Comments on Proposed Procedures for Use in New or Revised Energy Conservation Standards and Test Procedures for Consumer Products and Commercial/Industrial Equipment, *available at* [https://policyintegrity.org/documents/DOE\\_Process\\_Rule\\_Comments\\_2019.5.6\\_final.pdf](https://policyintegrity.org/documents/DOE_Process_Rule_Comments_2019.5.6_final.pdf).

Policy Integrity’s Comments on Notice of Data Availability for the Process Rule, *available at* [https://policyintegrity.org/documents/Institute\\_for\\_Policy\\_Integrity\\_DOE\\_Process\\_Rule\\_NODA\\_Comments.pdf](https://policyintegrity.org/documents/Institute_for_Policy_Integrity_DOE_Process_Rule_NODA_Comments.pdf).

Policy Integrity’s Comments on Supplemental Notice of Proposed Rulemaking on Procedures for Evaluating Statutory Factors for Use in New or Revised Energy Conservation Standards, *available at* [https://downloads.regulations.gov/EERE-2017-BT-STD-0062-0170/attachment\\_1.pdf](https://downloads.regulations.gov/EERE-2017-BT-STD-0062-0170/attachment_1.pdf).

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<sup>25</sup> See generally <https://www.regulations.gov/document/EERE-2017-BT-STD-0059-0002/comment>.

<sup>26</sup> See <https://www.reginfo.gov/public/do/eAgendaViewRule?publd=202010&RIN=1904-AE11>.

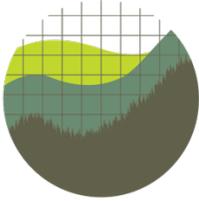
<sup>27</sup> Available at <https://www.regulations.gov/comment/EERE-2017-BT-STD-0059-0074>.

<sup>28</sup> *Id.* at 5 (emphasis added).

<sup>29</sup> See generally *id.* (on legal and implementation issues); *id.* at 15 (on criteria for pilot programs).

Policy Integrity's Comments on Proposed Energy Conservation Program: Energy Conservation Standards for General Service Incandescent Lamps, *available at* [https://policyintegrity.org/documents/DOE\\_GSIL\\_Standards\\_Comments\\_2019.11.04.pdf](https://policyintegrity.org/documents/DOE_GSIL_Standards_Comments_2019.11.04.pdf).

Policy Integrity's Comments on Adding Market-Based Flexibilities to the Energy Conservation Standards Program, *available at* <https://www.regulations.gov/comment/EERE-2017-BT-STD-0059-0074>.



May 6, 2019

**Attn:** Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy

**Re:** Energy Conservation Program for Appliance Standards: Proposed Procedures for Use in New or Revised Energy Conservation Standards and Test Procedures for Consumer Products and Commercial/Industrial Equipment (“Process Rule NOPR”)

**Docket No.:** EERE-2019-BT-STD-0062

The Institute for Policy Integrity (“Policy Integrity”) at New York University School of Law<sup>1</sup> respectfully submits comments on the Department of Energy (“DOE”)’s proposed changes to the Process Rule for prescribing energy conservation standards.<sup>2</sup> Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy.

These comments address three issues:

- DOE’s proposed thresholds for defining whether energy savings are “not . . . significant” are arbitrary; “significance” should instead be weighed by considering all important costs and benefits.
- DOE’s proposed replacement of its “walk-down” approach with an “economically rational consumer” test is insufficiently defined and inadequately justified: the agency vaguely alludes to “economic theory” but provides no citations; does not detail how it is defining a “rational consumer” or how the test will be conducted; does not explain whether or how the new test will weigh important social externalities; and does not provide any illustrations or guidance on how its new test will compare to the old one. DOE has failed to sufficiently justify its proposal and has not given the public enough information to provide meaningful comments.
- DOE proposes to continue to monetize the social cost of carbon dioxide “consistent with the guidance contained in OMB Circular A-4.” The 2016 estimates of the social cost of carbon published by the federal Interagency Working Group are the best available estimates and are consistent with *Circular A-4*, and the agency should continue to use those estimates, as it has done in the past.

We elaborate on each of these points in turn below.

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<sup>1</sup> This document does not purport to present New York University School of Law’s view, if any.

<sup>2</sup> 84 Fed. Reg. 3910 (Feb. 13, 2019).

## I. “Significance” Should Be Weighed By Comparing Costs and Benefits, Not Based on Arbitrary Thresholds

DOE arbitrarily attempts to draw lines and classify any potential energy savings of less than 0.5 quads over a 30-year period or less than a 10% improvement in a product’s energy efficiency as “not . . . significant” under the statute.<sup>3</sup> Setting such thresholds regardless of the costs and benefits of individual standards makes no economic sense and is contrary to congressional intent. What if, for example, a newly technologically feasible and otherwise economically justified standard would reduce a product’s energy consumption by 9.99%, or save 0.499 quads of energy, and do so all for the incredibly low pricetag of \$1? It is unreasonable to assume that a statute like the Energy Policy and Conservation Act, aimed at advancing the national need for energy conservation, would bar such a standard on the grounds of insignificance. Indeed, as the U.S. Court of Appeals for the District of Columbia Circuit held, Congress did not intend for the agency to pass up an essentially “cost-free chance to save energy.”<sup>4</sup> The D.C. Circuit elaborated that significance could be evaluated by comparing whether the “value” of the energy savings “outweighed” the “cost.”<sup>5</sup>

Contrary to the assumption DOE makes here, there is no single numerical threshold at which energy savings suddenly and obviously stop being “significant.” Rather, “significant” is a relative term, a comparator that implicitly calls for the balancing of factors. As the U.S. Supreme Court has indicated, comparative terms that “admit[ ] of degree” like “significant,” “minimize,” or “reasonable” typically should be assessed by comparing costs and benefits, because “whether it is ‘reasonable’ to bear a particular cost may well depend on the resulting benefits.”<sup>6</sup>

To take one recent example, DOE’s energy conservation standards for dehumidifiers, finalized in 2016, were projected to save 0.3 quads over a 30-year period, representing a savings of 7.4% relative to the products’ baseline energy use.<sup>7</sup> Presumably, such standards would not pass DOE’s newly proposed thresholds. Yet those standards were projected to save consumers \$2.71 billion and reduce 18.6 million metric tons of carbon dioxide, thereby reducing \$600 million in climate damages (not to mention reducing \$70 million in human health and environmental damages from emissions of nitrogen oxides, plus reducing thousands of tons of sulfur dioxide and methane, as well as significant mercury emissions).<sup>8</sup> For many dehumidifiers, the payback period for consumers would be less than half a year.<sup>9</sup> The idea that such energy savings would not be “significant,” or that Congress

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<sup>3</sup> 84 Fed. Reg. at 3924.

<sup>4</sup> *NRDC v. Herrington*, 768 F.2d 1355, 1374 (D.C. Cir. 1985) (“We think it unlikely that the Congress that enacted NECPA and its four related energy statutes intended DOE to throw away a cost-free chance to save energy unless the amount of energy saved was genuinely trivial.”).

<sup>5</sup> *Id.* at n.19 (discussing administrative costs and other costs, and concluding that “If . . . the value of saving small amounts of energy was outweighed by the cost and trouble of undertaking any appliance program at all, DOE might be justified in determining that those small savings were not significant.”).

<sup>6</sup> *Entergy Corp. v. Riverkeeper, Inc.*, 129 S.Ct. 1498, 1506, 1510 (2009).

<sup>7</sup> 81 Fed. Reg. 38,338, 38,340 (June 13, 2016).

<sup>8</sup> *Id.* (values are calculated at a 3% discount rate).

<sup>9</sup> *Id.* at 38,339 (showing the payback period for portable dehumidifiers of under 50 pints per day at 0.4-0.5 years).

intended to block an energy conservation standard that would achieve such important cost-savings for consumers and environmental benefits, is unreasonable. Consequently, DOE's proposed definition and thresholds are unreasonable.

## II. DOE's "Rational Consumer" Test Is Insufficiently Defined and Inadequately Justified

In Appendix A § 7(e)(2)(G), DOE proposes to assess the economic justification for an energy conservation standard in part by considering "whether an economically rational consumer would choose a product meeting the candidate/trial standard level over products meeting the other feasible trial standard levels after considering all relevant factors, including but not limited to, energy savings, efficacy, product features, and life-cycle costs."<sup>10</sup> In the proposed rule's preamble, DOE indicates that "[i]f an economically rational consumer would not choose the candidate trial standard level after considering these factors, [the candidate TSL] would be rejected as economically unjustified."<sup>11</sup> In other words, DOE proposes that, notwithstanding all the other statutory factors for economic justification, this new test may determine whether a standard is justified or not. This potentially determinative new test, however, is insufficiently defined and inadequately justified. For example:

- DOE says that this new approach is dictated by "economic theory";<sup>12</sup> yet the agency cites no theory or supporting literature.
- DOE provides no details on how it would define an "economically rational consumer"<sup>13</sup> or on how this analysis would be conducted. Importantly, for example, DOE does not explain if or how its "rational" consumer will weigh social externalities. Given the statutory mandate to assess "the need for national energy...conservation" as part of determining economic justification,<sup>14</sup> and given court rulings that "the expected reduction in *environmental costs needs to be taken*

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<sup>10</sup> 84 Fed. Reg. at 3948.

<sup>11</sup> *Id.* at 3938.

<sup>12</sup> *Id.*

<sup>13</sup> Various definitions for "rationality" exist in various economic texts, based on factors like information and foresight. *E.g.*, Christine Jolls, Cass Sunstein & Richard Thaler, *A Behavioral Approach to Law and Economics*, 50 *Stanford L. Rev.* 1471 (1998), [https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=12172&context=journal\\_articles](https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=12172&context=journal_articles); Sanjit Dhami, Ali al-Nowaihi & Cass Sunstein, *Heuristics and Public Policy: Decision Making under Bounded Rationality* (Olin Center Discussion Paper No. 962, 2018), [http://www.law.harvard.edu/programs/olin\\_center/papers/pdf/Sunstein\\_963.pdf](http://www.law.harvard.edu/programs/olin_center/papers/pdf/Sunstein_963.pdf). But DOE neglects to specify a definition, discuss any of the factors of "rationality," or, crucially, explain how its definition of "rationality" will fit into the statutory framework and the need to consider social externalities. Will DOE's rational consumer have "full" information or "optimal" information, and how will that be defined? Will DOE's rational consumer have stable preferences and perfect foresight, or will foresight and information lead to fluctuating preferences? Will DOE's rational consumer consider all costs and benefits, only private costs and benefits, or a combination of private costs and benefits plus some social costs and benefits? Does DOE's rational consumer view environmental benefits as a "product feature" or as part of measuring "energy savings" under the proposed definition? *See* 84 Fed. Reg. at 3948. DOE must answer these and many other questions before proposing this kind of a test.

<sup>14</sup> 42 U.S.C. § 6295(o).

*into account*” in the assessment of economic justification,<sup>15</sup> the agency must clarify whether and how this new test will incorporate all the other statutory factors for assessing economic justification.

- DOE provides no illustrative examples to show how this new analysis would play out or how it would differ in practical application from the longstanding “walk-down” approach.

Without more information, it is both impossible for the public to meaningfully comment on the proposed change, and DOE has failed to provide sufficient justification to support why the proposed change is consistent with economic theory and with statutory requirements.

### III. DOE Must Continue Using the Best Available Estimates of the Social Cost of Greenhouse Gases

In Appendix A § 17(h)(3), DOE proposes that, “Consistent with Executive Order 13783 . . . when monetizing the value of changes in reductions in CO<sub>2</sub> and nitrous oxides emissions . . . DOE ensures . . . that any such estimates are consistent with the guidance contained in OMB Circular A-4.”<sup>16</sup> As Policy Integrity has explained to DOE previously,<sup>17</sup> the estimates of the social cost of greenhouse gases developed by the federal Interagency Working Group (IWG) in 2016 are most consistent with the guidance of *Circular A-4* and with best economic practices.

Specifically, DOE should use the global estimates of the social costs of greenhouse gases. In August 2016, the U.S. Court of Appeals for the Seventh Circuit determined that a global perspective on climate damages was the reasonable approach for DOE to take in setting energy conservation standards.<sup>18</sup> DOE should not attempt to calculate and base its energy conservation standards on a domestic-only value of the social cost of carbon. Not only is it inconsistent with Circular A-4 and best economic practices to fail to estimate the global damages of U.S. greenhouse gas emissions in regulatory analyses, but existing methods for estimating a “domestic-only” value are unreliable, incomplete, and inconsistent with Circular A-4. A domestic-only estimate fails to use models built for the purpose of calculating regional damages, ignores recent literature on significant U.S. climate damages, and fails to reflect international spillovers to the United States, U.S. benefits from foreign reciprocal actions, and the extraterritorial interests of U.S. citizens including financial interests and altruism.

The social costs of greenhouse gases metric, developed by the federal IWG, is the best available tool for measuring the economic damages from greenhouse gas emissions and it is consistent with Circular A-4. It has been used in analysis for over 100 federal regulations that affect greenhouse gas emissions, as well as by a number of states in electricity and

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<sup>15</sup> *Zero Zone v. Dept. of Energy*, 832 F.3d 654, 677 (7th Cir. 2016) (emphasis added).

<sup>16</sup> 84 Fed. Reg. at 3952.

<sup>17</sup> See [https://policyintegrity.org/documents/PolicyIntegrity\\_Direct\\_Heating\\_RFI\\_Comments.pdf](https://policyintegrity.org/documents/PolicyIntegrity_Direct_Heating_RFI_Comments.pdf).

<sup>18</sup> *Zero Zone*, 832 F.3d at 674.

climate policy.<sup>19</sup> This metric takes into account the interconnected, global nature of our climate-vulnerable economy, as well as the devastating effects that climate change will have on younger and future generations.

In an energy conservation program rule for walk-in cooler and freezer systems released in July 2017, the Department made use of the IWG social cost of carbon estimates, including the 2.5-percent, 3-percent, and 5-percent discount rates, and global climate damages.<sup>20</sup> In fact, in the announcement of the final standards, DOE explicitly stated that it is appropriate to consider global benefits as greenhouse gas emissions accrue globally.<sup>21</sup> Specifically, DOE found that “[t]he CO<sub>2</sub> reduction is a benefit that accrues globally. DOE maintains that consideration of global benefits is appropriate because of the global nature of the climate change problem.”<sup>22</sup> The Department further stated that “preference is given to consideration of the global benefits of reducing CO<sub>2</sub> emissions,”<sup>23</sup> over domestic-only benefits of emissions reductions.

In that rule, DOE also included an explanation of why the Department used the range of social costs of greenhouse gases discount rates. On the question of appropriate discount rates, DOE stated, “The central value, 3 percent, is consistent with estimates provided in the economics literature and OMB’s Circular A-4 guidance for the consumption rate of interest,”<sup>24</sup> and that “for purposes of capturing the uncertainties involved in regulatory impact analysis, the IWG emphasizes the importance of including all four sets of SC-CO<sub>2</sub> values,”<sup>25</sup> which are reflected in DOE’s analysis for this 2017 rule.<sup>26</sup> Using the range of discount rates and focusing on global damages is consistent with best practices and is consistent with Circular A-4, and the agency should do so in this rule.

The Department should not rely on any “interim” estimates that do not include a range of discount rates or global climate impacts. Two agencies have developed new “interim” values of the social costs of greenhouse gases following Executive Order 13,783.<sup>27</sup> Relying on faulty economic theory, these “interim” estimates drop the social cost of carbon from \$50 per ton in year 2020 down to as little as \$1 per ton, and drop the social cost of methane from \$1420 per ton in year 2020 down to \$58. These “interim” estimates are inconsistent with accepted science and economics. The IWG’s methodology and estimates have been repeatedly endorsed by reviewers as transparent, consensus-based, and firmly grounded in the academic literature. By contrast, the “interim” estimates ignore the interconnected,

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<sup>19</sup> Institute for Policy Integrity, *Social Cost of Greenhouse Gases (2017)*, available at: [https://policyintegrity.org/files/publications/Social Cost of Greenhouse Gases Factsheet.pdf](https://policyintegrity.org/files/publications/Social%20Cost%20of%20Greenhouse%20Gases%20Factsheet.pdf).

<sup>20</sup> 82 Fed. Reg. at 31,808.

<sup>21</sup> *Id.* at 31,881.

<sup>22</sup> *Id.*

<sup>23</sup> *Id.* at 31,855.

<sup>24</sup> *Id.* at 31,856.

<sup>25</sup> *Id.* at 31,855.

<sup>26</sup> *Id.*

<sup>27</sup> Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Stay of Certain Requirements, 82 Fed. Reg. 51,788 (Nov. 8, 2017); Waste Prevention, Production Subject to Royalties, and Resource Conservation; Delay and Suspension of Certain Requirements, 82 Fed. Reg. 46,458 (Oct. 5, 2017).

global nature of our climate-vulnerable economy, and obscures the devastating effects that climate change will have on younger and future generations. DOE should not use the “interim” social cost of greenhouse gas estimates because of their methodological flaws.<sup>28</sup>

Respectfully submitted,

Iliana Paul, Policy Analyst

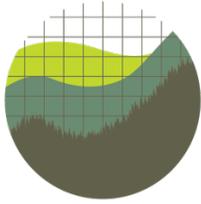
Jason A. Schwartz, Legal Director

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<sup>28</sup> For more details, see Environmental Defense Fund, Institute for Policy Integrity at New York University School of Law, Natural Resources Defense Council, Sierra Club, and Union of Concerned Scientists, Comments to Bureau of Land Management on Proposed Rule, Regulatory Impact Analysis, and Environmental Assessment on the Delay and Suspension of Certain Requirements for Waste Prevention and Resource Conservation, (Nov. 6, 2017), *available at* <https://policyintegrity.org/projects/update/comments-on-delay-of-blm-waste-prevention-rule>.



Institute for  
**Policy Integrity**

NEW YORK UNIVERSITY SCHOOL OF LAW

August 9, 2019

**Attn:** Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy

**Re:** Notice of Data Availability for Energy Conservation Program Procedures, Interpretations, and Policies for Consideration of New or Revised Energy Conservation Standards for Consumer Products (“Process Rule NODA”)

**Docket No.:** EERE-2019-BT-STD-0062

The Institute for Policy Integrity (“Policy Integrity”) at New York University School of Law<sup>1</sup> respectfully submits comments on the Department of Energy (“DOE”)’s Notice of Data Availability (NODA) with respect to its proposed changes to the Process Rule.<sup>2</sup> Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy. Policy Integrity previously commented on the proposed changes to the Process Rule, and these supplemental comments on the NODA incorporate those earlier comments.<sup>3</sup>

In the draft changes to the Process Rule, DOE proposed adopting thresholds for when energy conservation standards would be pursued: specifically, at least either 0.5 quad in energy savings or a 10% reduction in energy consumption over a 30-year analysis period.<sup>4</sup> In the NODA, DOE now further proposes to focus solely on “site energy” as the “metric for evaluating energy savings.”<sup>5</sup> The NODA claims that, using these metrics, only 34 of 57 energy conservation standards set since the 1985 *NRDC v. Herrington* decision would meet the newly proposed threshold, but the agency claims that those 34 rules account for the bulk of total energy savings.<sup>6</sup> In other words, 23 previous standards would not have met the newly proposed thresholds, and the energy savings and emissions reductions attributable to those 23 standards would not have been achieved if such thresholds had been in place at the time of those original rulemakings.

As explained in Policy Integrity’s initial comments on the proposed changes to the Process Rule, attempting to define the significance of energy savings according to arbitrary thresholds violates both DOE’s statutory mandate and the principles of rational rulemaking. Nor is it appropriate to use a percent comparison to dismiss the 23 previous standards that would have fallen below the newly proposed thresholds as somehow insignificant. DOE seems to imply that, because those 23 previous standards constitute only about 6% of total energy savings from all past standards, they must all be insignificant. However, as the U.S. Court of Appeals for the Fifth Circuit recently observed, even a seemingly “very small portion” of a “gargantuan” total effect may nevertheless “constitute [ ] a gargantuan [effect] on its own terms.”<sup>7</sup> In other words, percent comparisons can be misleading and

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<sup>1</sup> This document does not purport to present New York University School of Law’s view, if any.

<sup>2</sup> 84 Fed. Reg. 36,037 (July 26, 2019).

<sup>3</sup> Docket No. EERE-2017-BT-STD-0062-0119 (submitted May 6, 2019), *also available at* [https://policyintegrity.org/documents/DOE\\_Process\\_Rule\\_Comments\\_2019.5.6\\_final.pdf](https://policyintegrity.org/documents/DOE_Process_Rule_Comments_2019.5.6_final.pdf).

<sup>4</sup> 84 Fed. Reg. at 36,038.

<sup>5</sup> *Id.*

<sup>6</sup> *Id.* (claiming that the 34 rules account for 93.87% of energy savings).

<sup>7</sup> *Southwestern Electric Power Co. v. EPA*, 2019 WL 1577740 at \*22 (5th Cir., Apr. 12, 2019). Note that DOE routinely touts the gargantuan successes of the appliance and equipment standards program: its fact sheet on the program claims it has collectively saved “more energy than the entire nation consumes in one year,” along with over \$2 trillion in consumer savings. See (cont’d)

can be manipulated by the choice of the denominator; what matters is the numerator's actual contribution to real effects, to social costs and benefits. As Policy Integrity's initial comments argued, the significance of energy savings must be weighed by considering all important costs and benefits.

Using DOE's list of the 57 past standard, Policy Integrity has identified the 23 standards that would have fallen below the proposed thresholds. Using the original rulemakings and technical support documents for the 18 of those 23 standards for which DOE originally calculated monetized climate benefits using an estimate of the social cost of carbon,<sup>8</sup> Policy Integrity has catalogued the tons of emissions that DOE originally estimated would be reduced, the monetized climate benefits of those emissions reductions using the social cost of carbon metrics that DOE adopted at the time, and the net consumer benefits that DOE calculated at the time.

To summarize the findings,<sup>9</sup> the past standards that would have fallen below DOE's proposed threshold for significance collectively reduced over 225 million metric tons of carbon dioxide, as well as nearly 900,000 tons of methane, and over two thousand tons of the highly potent nitrous oxide, plus tens of thousands of tons each of sulfur dioxide and nitrous oxides.<sup>10</sup> According to DOE's original calculations of monetized climate benefits, these past standards that DOE now seeks to retroactively label as "insignificant" collectively are expected to generate over \$7 billion total in monetized climate benefits. Note that the \$7 billion figure is based on DOE's original calculations, using a central estimate of the social cost of carbon at a 3% discount rate.<sup>11</sup> In the past, DOE has used a social cost of carbon as low as \$15 per ton; more recent updates put the figure considerably higher. A recalculation of monetized climate benefits using updated estimates of the social cost of carbon and adjusting past estimates into current U.S. dollars to account for inflation would only further increase this already highly significant sum. Importantly, these highly significant environmental benefits come on top of tens of billions of dollars more in cumulative net consumer benefits. In all of the past standards reviewed, consumer benefits alone always vastly exceeded costs.

In short, had DOE's proposed thresholds for significance existed in the past, tremendously significant net benefits to the environment and to consumers would have been sacrificed. Adopting the thresholds going forward would similarly sacrifice significant environmental and consumer benefits in the future.

Respectfully submitted,  
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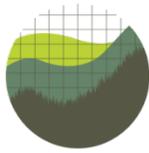
[https://www.energy.gov/sites/prod/files/2017/01/f34/Appliance%20and%20Equipment%20Standards%20Fact%20Sheet-011917\\_0.pdf](https://www.energy.gov/sites/prod/files/2017/01/f34/Appliance%20and%20Equipment%20Standards%20Fact%20Sheet-011917_0.pdf). Even a small portion of such benefits is still significant.

<sup>8</sup> In other words, the 18 standards issued between 2008 and 2017 that would have fallen below the proposed thresholds. The 5 additional standards that would have fallen below the proposed thresholds were finalized between 1989 and 2007, and DOE did not use a social cost of carbon metric during that period. However, those 5 additional standards surely would have further reduced greenhouse gas emissions and delivered important monetized climate benefits on top of net energy savings for consumers.

<sup>9</sup> The spreadsheet cataloguing the net benefits of the rules is available at:  
<https://docs.google.com/spreadsheets/d/1fMLI6mdl1AQqPZP6PwD5XihnpfwVyTj8Hs3R8vbcI0Y/edit#gid=0>

<sup>10</sup> Note that for several standards, emissions reductions of certain pollutants were not reported. This is especially true for methane and nitrous oxide, both of which are highly potent greenhouse gases. Had such emissions reductions been reported, the total climate benefits of these standards would be even higher.

<sup>11</sup> To the extent not all of DOE's original calculations included benefits from reductions of methane and nitrous oxide, either converted to carbon dioxide-equivalent units or weighed on their own, the actual total climate benefits of the standards would be even higher.



March 16, 2020

To: Office of Energy Efficiency and Renewable Energy, Dept. of Energy

Subject: Comments on Supplemental Notice of Proposed Rulemaking on Procedures for Evaluating Statutory Factors for Use in New or Revised Energy Conservation Standards (85 Fed. Reg. 8483, Feb. 14, 2020)

Docket: EERE-2015-BT-STD-0062

The Institute for Policy Integrity at New York University School of Law<sup>1</sup> respectfully submits these comments on the Department of Energy's supplemental proposed changes to its Process Rule.<sup>2</sup> Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy.

The Department of Energy proposes that—rather than maximizing improvements in energy efficiency by selecting the most stringent technologically feasible standard for which benefits exceed burdens<sup>3</sup>—the agency will instead analyze the costs and benefits of all technologically feasible options but then exclude certain efficiency levels as not “economically justified”<sup>4</sup> on the grounds of certain “adverse economic impacts” such as effects to small businesses, market competition, or consumer convenience.<sup>5</sup> The Department argues that its proposed changes will ensure that such adverse effects will be considered more “consistently” when applying the statutory factors to select an efficiency standard.<sup>6</sup>

In fact, the proposed change will not ensure consistent consideration of the statutory factors. To the contrary, the proposed change will allow the Department to irrationally and inconsistently give preference to whichever subset of economic impacts the Department wants to focus on in order to deem standards that otherwise achieve net benefits as instead being *not* economically justified.<sup>7</sup> As the Department's own examples demonstrate, the proposed change would allow the Department, for instance, to deem a trial standard level (TSL) that has benefits exceeding burdens, and that would maximize energy savings, as instead not economically justified simply because of impacts to small businesses.<sup>8</sup> The proposed change offers no guidance on what magnitude of impact to small businesses is required to trump all other cost-benefit calculations and statutory factors in this way—seemingly, any adverse impact on small businesses could be labeled as “significant” and used as pretense for the Department to redefine a TSL as not economically justified.

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<sup>1</sup> This document does not purport to present New York University School of Law's views, if any.

<sup>2</sup> 85 Fed. Reg. 8483 (Feb. 14, 2020).

<sup>3</sup> See 42 U.S.C. § 6295(o)(2)(A) & (B).

<sup>4</sup> 85 Fed. Reg. at 8486 (after discussing two possible TSLs that both have monetized benefits exceeding costs, nevertheless arguing that “if, for example, the TSL with the slightly higher energy savings also has a significant, adverse impact on small business manufacturers as compared to the other TSL, it could be difficult to argue that it is economically justified.”).

<sup>5</sup> *Id.* at 8486-87.

<sup>6</sup> *Id.* at 8487.

<sup>7</sup> See *id.* (explaining that the proposed rule change would sometimes give preference to the standard that maximizes net benefits, yet other times instead give preference to the standard that optimizes consumer savings, or that minimizes negative impacts to either consumers or manufacturers, or that factors in consumer convenience—all without explaining any rational principle to guide which subset of effects the Department chooses to give priority in any particular proceeding).

<sup>8</sup> *Id.* at 8486.

Certainly, a standard's impact to manufacturers (whether the manufacturers are large or small) is an important factor that the statute instructs the Department to weigh in assessing whether a standard is economically justified.<sup>9</sup> But the statute does not allow the Department to pick and choose which subset of factors it wants to give controlling weight to in any particular determination. Instead, the statute instructs the Department to consider not just impacts to manufacturers, but impacts to consumers, cost savings, energy savings, product performance, market competition, and the need for national energy conservation<sup>10</sup>—the last of which includes environmental, grid reliability, and national security impacts.<sup>11</sup> More broadly, all these factors are merely elements of the broader determination required by statute of whether “the benefits of the standard exceed its burdens.”<sup>12</sup>

The way to consistently balance all the relevant factors is through a thorough and transparent cost-benefit analysis. The cost-benefit analysis should consider not just monetized costs and benefits but also any important yet hard-to-quantify effects. In this way, for example, impacts to small businesses neither can become a potentially controlling factor and be used at the Department's whim to override all other considerations (as the proposed rule change would allow), nor are they ignored in the calculus (as the Department seemingly, but unfoundedly, fears would be the case without the proposed rule change). Instead, impacts to small businesses should be quantified to the extent possible and then weighed against all other important costs and benefits, including the environmental benefits of energy efficiency. While there is certainly some value in protecting small businesses,<sup>13</sup> selecting a standard that would reduce energy efficiency in order to protect small businesses also comes at a real cost—perhaps a very significant cost to consumers, the environment, and the need for national energy conservation. All those costs and benefits should be balanced in a transparent analysis, and the mere existence of one subset of adverse impacts should not render an otherwise net beneficial standard as *not* economically justified.

Because the proposed regulatory change would allow the Department to define “economically justified” not on the basis of whether a standard's benefits exceed its burdens, nor on whether a standard would maximize net benefits, but instead based on seemingly any subset of adverse impacts to which the

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<sup>9</sup> 42 U.S.C. § 6295(o)(2)(B)(i)(I).

<sup>10</sup> *Id.* § 6295(o)(2)(B)(i)(I)-(VII).

<sup>11</sup> The Department has recently acknowledged that when assessing the “need for national energy conservation” factor, the Department normally analyzes environmental benefits, including reduced greenhouse gas emissions and air pollution associated with fossil-fuel based energy production, as well as benefits to the reliability of the nation's energy system and to national security that come from reduced overall energy demand. *E.g.*, Energy Conservation Program: Energy Conservation Standards for General Service Incandescent Lamps, 84 Fed. Reg. 46,830, 46,835 (Sept. 5, 2019). In 2016, the U.S. Court of Appeals for the Seventh Circuit concluded that: “To determinate whether an energy conservation measure is appropriate under a cost-benefit analysis, the expected reduction in environmental costs *needs to be taken into account.*” *Zero Zone, Inc. v. Dept. of Energy*, 832 F.3d 654, 677 (7th Cir. 2016) (emphasis added). *See also id.* at n.24 (further concluding that the agency also likely had the authority, if not the requirement, to consider environment effects under the first statutory factor on economic impacts, because “[e]nvironmental benefits have an economic impact”). Interpreting nearly identical statutory language that EPCA applies to the Department of Transportation's setting of vehicle efficiency standards (“the need of the United States to conserve energy”), the U.S. Court of Appeals for the D.C. Circuit observed in 1988 that the Department of Transportation has interpreted that language as “*requir[ing]* consideration of . . . environmental . . . implications,” *Pub. Citizen v. Nat'l Highway Traffic Safety Admin.*, 848 F.2d 256, 263 n.27 (D.C. Cir. 1988) (R.B. Ginsburg, J.) (quoting 42 Fed. Reg. 63,184, 63,188 (Dec. 15, 1977) and adding emphasis to the word *requires*). And the U.S. Court of Appeals for the Ninth Circuit held that the Department of Transportation's failure to monetize climate benefits explicitly in its economic assessment of vehicle efficiency standards was arbitrary and capricious. *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1203 (9th Cir. 2008); *see also id.* at 1197-98 (indicating that, due to advancements in “scientific knowledge of climate change,” “[t]he need of the nation to conserve energy is even more pressing today than it was at the time of EPCA's enactment”).

<sup>12</sup> 42 U.S.C. § 6295(o)(2)(B)(i).

<sup>13</sup> For suggestions on how to properly value possible efficiency effects and distributional effects to small businesses, see Inst. for Policy Integrity, Letter to the U.S. Small Business Administration, “Suggested Improvements to the Implementation of the Regulatory Flexibility Act” (Feb. 24, 2012), [https://policyintegrity.org/documents/Policy\\_Integrity\\_Letter\\_to\\_SBA\\_on\\_RFA.pdf](https://policyintegrity.org/documents/Policy_Integrity_Letter_to_SBA_on_RFA.pdf).

Department happens to arbitrarily assign controlling weight, the proposed change should not be adopted. It is inconsistent both with statutory requirements and principles of rational decisionmaking.

Besides the redefinition of “economically justified,” the proposed rule also seeks to recodify two provisions in the regulatory text. One provision proposes that a standard level will not be adopted if it “is likely to result in the unavailability of any covered product/equipment type with performance characteristics . . . that are substantially the same as products generally available.”<sup>14</sup> The second provision proposes that a standard will not be adopted if it “would not result in significant conservation of energy.”<sup>15</sup> Though both provisions have some basis in the statute<sup>16</sup> and in the pre-existing regulations,<sup>17</sup> the Department has misinterpreted and misapplied similar language recently, and so Policy Integrity here briefly summarizes our relevant comments on these issues. The attached comments, which provide more details on these arguments, are hereby incorporated.

Concerning “unavailability,” the statute sets a fairly high bar that any finding of unavailability must be established by “a preponderance of the evidence”<sup>18</sup>—language that does not appear in the Department’s proposed provision. In determining whether other products are “substantially the same,” the Department should consider that consumer preferences changes, both naturally over time and also in response to regulatory standards. When consumers are readily willing to substitute one product for another, that may constitute compelling evidence that many consumers view the products as providing substantially the same performance. Finally, in assessing whether unavailability is “likely,” the Department should consider various reasonable assumptions about what the future might look like if a particular standard were implemented, including the potential for technological development. See the attached comments on the energy conservation standards for general service incandescent lamps for more details.

Concerning the “significance” of energy conservation, the Department has recently set a numerical threshold for determining “significance.”<sup>19</sup> Setting an arbitrary numerical threshold for “significance,” regardless of the costs and benefits of individual standards, makes no economic sense and is contrary to congressional intent. In recent comments, Policy Integrity identified 18 past energy conservation standards that would have fallen below the thresholds the Department has now established. Those standards collectively would have reduced over 225 million metric tons of carbon dioxide, generating billions of dollars in monetized climate benefits—on top of tens of billions of dollars in cumulative consumer benefits—resulting in tremendous net benefits for consumers and the environment. It is unreasonable to assume that a statute like the Energy Policy and Conservation Act, aimed at advancing the national need for energy conservation, would bar such standards on the grounds of insignificance. Indeed, as the U.S. Court of Appeals for the District of Columbia Circuit held, Congress did not intend for the Department to pass up an essentially “cost-free chance to save energy.”<sup>20</sup> The D.C. Circuit elaborated that significance could be evaluated by comparing whether the “value” of the energy savings

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<sup>14</sup> 85 Fed. Reg. at 8490.

<sup>15</sup> *Id.*

<sup>16</sup> 42 U.S.C. § 6295(o)(3) & (4).

<sup>17</sup> See 10 C.F.R. pt 430, Appendix A, at 5(e)(1)(ii) & (iii) (1996).

<sup>18</sup> 42 U.S.C. § 6295(o)(4).

<sup>19</sup> 85 Fed. Reg. 8626 (Feb. 14, 2020).

<sup>20</sup> *NRDC v. Herrington*, 768 F.2d 1355, 1373 (D.C. Cir. 1985) (“We think it unlikely that the Congress that enacted NECPA and its four related energy statutes intended DOE to throw away a cost-free chance to save energy unless the amount of energy saved was genuinely trivial.”).

“outweighed” the “cost.”<sup>21</sup> Indeed, “significance” should be assessed by comparing costs and benefits, because “whether it is ‘reasonable’ to bear a particular cost may well depend on the resulting benefits.”<sup>22</sup> See the attached comments on the Process Rule and notice of data availability for more details.

Sincerely,  
Jason A. Schwartz, Legal Director  
Institute for Policy Integrity  
[jason.schwartz@nyu.edu](mailto:jason.schwartz@nyu.edu)

Attached:

Policy Integrity’s Comments on Energy Conservation Program: Energy Conservation Standards for General Service Incandescent Lamps (84 Fed. Reg. 46,830, Sept. 5, 2019), *available at* [https://policyintegrity.org/documents/DOE\\_GSIL\\_Standards\\_Comments\\_2019.11.04.pdf](https://policyintegrity.org/documents/DOE_GSIL_Standards_Comments_2019.11.04.pdf).

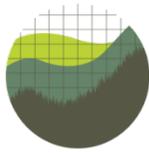
Policy Integrity’s Comments on Proposed Procedures for Use in New or Revised Energy Conservation Standards and Test Procedures for Consumer Products and Commercial/Industrial Equipment, *available at* [https://policyintegrity.org/documents/DOE\\_Process\\_Rule\\_Comments\\_2019.5.6\\_final.pdf](https://policyintegrity.org/documents/DOE_Process_Rule_Comments_2019.5.6_final.pdf).

Policy Integrity’s Comments on Notice of Data Availability for the Process Rule, *available at* [https://policyintegrity.org/documents/Institute\\_for\\_Policy\\_Integrity\\_DOE\\_Process\\_Rule\\_NODA\\_Comments.pdf](https://policyintegrity.org/documents/Institute_for_Policy_Integrity_DOE_Process_Rule_NODA_Comments.pdf).

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<sup>21</sup> *Id.* at 1373, n.19 (discussing administrative costs and other costs, and concluding that “If . . . the value of saving small amounts of energy was outweighed by the cost and trouble of undertaking any appliance program at all, DOE might be justified in determining that those small savings were not significant.”).

<sup>22</sup> *Entergy Corp. v. Riverkeeper, Inc.*, 129 S. Ct. 1498, 1506, 1510 (2009).



November 4, 2019

To: Office of Energy Efficiency and Renewable Energy, Dept. of Energy

Subject: Comments on Energy Conservation Program: Energy Conservation Standards for General Service Incandescent Lamps (84 Fed. Reg. 46,830, Sept. 5, 2019)

Docket: EERE-BT-STD-0022

The Institute for Policy Integrity at New York University School of Law<sup>1</sup> respectfully submits comments on the Department of Energy's proposed determination not to increase the efficiency of general service incandescent lamps.<sup>2</sup> Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy.

The Department of Energy has made an initial determination that the energy conservation standards for general service incandescent lamps (GSILs) do not need to be amended—even though improved efficiency is “technologically feasible”<sup>3</sup> through application, for example, of halogen infrared (HIR) technology,<sup>4</sup> and even though a new standard that prompted consumers to switch to more efficient products like LEDs and CFLs would save consumers billions of dollars.<sup>5</sup> Instead, the Department has concluded that increasing the efficiency of GSILs “would not be economically justified” because increasing the standard for incandescent lamps would affect purchase prices and operating costs in a way that would prompt many consumers to switch from HIR-type GSILs to other products, like LEDs and CFLs, that deliver even greater lifetime cost- and energy-savings, and so would—according the agency—make GSILs “unavailable” in the marketplace.<sup>6</sup> The Department concludes that it “cannot find economic justification in a standard the purpose of which is to force the unavailability of a product type, performance characteristic or feature in contravention of EPCA.”<sup>7</sup>

There are at least two major problems with this conclusion. First, the Department has made a determination about “economic justification” without considering a factor that Congress intended the agency to consider: specifically, “the need for national energy conservation,”<sup>8</sup> and environmental effects in particular. Second, the Department has instead based its determination about “economic justification” on a factor that Congress did not intend for the agency to consider: specifically, the Department has taken a separate statutory test on “unavailability,”<sup>9</sup> conflated it with the separate definition of “economically justified,” and used that single conflated factor to trump the seven statutorily defined factors that the agency is supposed to consider “to the greatest extent practicable” to “determine whether the benefits of the standard exceed its burdens” and so is “economically justified.”<sup>10</sup> Moreover, the Department grossly misinterprets and misapplies the test for “unavailability.”

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<sup>1</sup> This document does not purport to present New York University School of Law's views, if any.

<sup>2</sup> 84 Fed. Reg. 46,830 (Sept. 5, 2019).

<sup>3</sup> *Id.* at 46,857.

<sup>4</sup> *Id.* at 46,837, 46,840

<sup>5</sup> *Id.* at 46,858.

<sup>6</sup> *Id.* at 46,858.

<sup>7</sup> *Id.* at 46,858.

<sup>8</sup> 42 U.S.C. § 6295(o)(2)(B)(i)(VI).

<sup>9</sup> 42 U.S.C. § 6295(o)(4).

<sup>10</sup> 42 U.S.C. § 6295(o)(2)(B)(i).

The Department also has made errors, failed to test assumptions, and underexplained its methodology and reasons for estimating key inputs, such as product costs, future electricity prices, and discount rates.

***Failure to Consider the Need for National Energy Conservation, and Forgone Environmental Benefits***

The Energy Policy and Conservation Act (EPCA) requires the Department to weigh the benefits and burdens of proposed efficiency standards to determine whether they are economically justified, and lists six specific statutory factors, including “the need for national energy and water conservation.”<sup>11</sup> (The seventh factor is a catchall for other “relevant” considerations.) The Department acknowledges that, in assessing the “need for national energy conservation” factor, the agency normally would analyze environmental benefits, including reduced greenhouse gas emissions and air pollution associated with fossil-fuel based energy production, as well as benefits to the reliability of the nation’s energy system and to national security that come from reduced overall energy demand.<sup>12</sup> However, here the Department announces that because it “has tentatively concluded [that] amended standards for GSILs would not be economically justified . . . DOE did not conduct a utility impact analysis or emissions analysis.”<sup>13</sup>

That conclusion puts the cart several steps before the horse. Analyses of emissions, reliability, national security, utility impacts, and other elements of the “need for national energy conservation” are required by statute to be *an integral part of* the determination of whether a standard is economically justified, and so must *not be conducted after* a determination is already made. In the proposed determination, the Department reports a manufacturer impact analysis,<sup>14</sup> as required by the first statutory factor for economic justification;<sup>15</sup> a lifecycle cost analysis,<sup>16</sup> as required by the second statutory factor;<sup>17</sup> a national energy savings analysis,<sup>18</sup> as required by the third statutory factor;<sup>19</sup> and a utility/performance impact evaluation,<sup>20</sup> as required by the fourth statutory factor.<sup>21</sup> The fifth statutory factors requires a determination by the Attorney General of any impacts on competition;<sup>22</sup> here, the Department reports it did not consult with the Attorney General about competition effects, because it is not proposing new standards.<sup>23</sup> That said, the Department claims that consideration of “impacts on competition” is a factor in the “qualitative part” of its manufacturing impact analysis,<sup>24</sup> as included in Chapter 11 of the *Technical Support Document*.<sup>25</sup> (Notably, the analysis does not consider possible impacts to competitiveness if U.S. manufacturers fall behind the world market for more efficient lightbulbs.<sup>26</sup>)

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<sup>11</sup> 42 U.S.C. § 6295(o)(2)(B)(i)(VI).

<sup>12</sup> 84 Fed. Reg. at 46,835.

<sup>13</sup> *Id.*

<sup>14</sup> 84 Fed. Reg. at 46,850.

<sup>15</sup> 42 U.S.C. § 6295(o)(2)(B)(i)(I).

<sup>16</sup> 84 Fed. Reg. at 46,843.

<sup>17</sup> 42 U.S.C. § 6295(o)(2)(B)(i)(II).

<sup>18</sup> 84 Fed. Reg. at 46,853.

<sup>19</sup> 42 U.S.C. § 6295(o)(2)(B)(i)(III).

<sup>20</sup> 84 Fed. Reg. at 46,835.

<sup>21</sup> 42 U.S.C. § 6295(o)(2)(B)(i)(IV).

<sup>22</sup> 42 U.S.C. § 6295(o)(2)(B)(i)(V).

<sup>23</sup> 84 Fed. Reg. at 46,835.

<sup>24</sup> DOE, *Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: General Service Incandescent Lamps at 2-7* (2019) [hereinafter 2019 TSD].

<sup>25</sup> *Id.* at 11-1.

<sup>26</sup> *Cf. id.* at 3-5 (comparing the European and Canadian regulatory standards).

Only for the sixth statutory factor—the need for national energy conservation—does the Department skip conducting any analysis at all.<sup>27</sup> Not only does the Department conclude that “there are no energy savings or benefits from transitioning to HIR technology”<sup>28</sup> without having considered any of the likely emissions benefits, but the Department also does not assess any emission benefits, reliability benefits, or national security benefits from the energy demand reductions that would accompany the so-called “consumer choice” scenario wherein consumers would switch from GSILs to CFLs or LEDs.

The omission of any analysis of forgone benefits to the environment, reliability, and national security is troubling, given the well-established understanding of the sixth statutory factor in the “economically justified” test. In 2016, the U.S. Court of Appeals for the Seventh Circuit concluded that: “To determinate whether an energy conservation measure is appropriate under a cost-benefit analysis, the expected reduction in environmental costs *needs to be taken into account.*”<sup>29</sup> Interpreting nearly identical statutory language that EPCA applies to the Department of Transportation’s setting of vehicle efficiency standards (“the need of the United States to conserve energy”<sup>30</sup>), the U.S. Court of Appeals for the D.C. Circuit observed in 1988 that the Department of Transportation has interpreted that language as “*requir[ing]* consideration of . . . environmental . . . implications,”<sup>31</sup> and the U.S. Court of Appeals for the Ninth Circuit held that the Department of Transportation’s failure to monetize climate benefits explicitly in its economic assessment of vehicle efficiency standards was arbitrary and capricious.<sup>32</sup>

From among the earliest energy conservation standards that the Department of Energy issued following EPCA’s 1987 amendments—and consistently since then, under administrations of both political parties—the agency has considered the economic and other effects of avoided carbon emissions when assessing the national need for energy conservation. Under President George H.W. Bush’s administration in 1989, the Department of Energy agreed with public commenters that “environmental effects,” including the “national security” implications of “mitigating global warming and pollution,” counted toward the “economic justification” for efficiency standards, under the “need of the nation to conserve energy” prong.<sup>33</sup> Less than two years later, again at the behest of commenters, the agency not only “quantified” the “social benefits” of environmental effects like “global warming” to help justify the selected standards, but further noted that environmental effects “have also been considered in the development of the selected standard levels.”<sup>34</sup> These practices continued through subsequent presidential administrations.<sup>35</sup> Yet suddenly, in this proposed determination, the Department abandons over 30 years of regulatory and judicial precedents under administrations of both parties; instead, the Department has concluded that, rather than being an integral and statutorily required element of the

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<sup>27</sup> See *generally id.* and at 10B-1 (not analyzing “emissions” or “reliability” at all in the Technical Support Document, despite explaining it is agency policy “to use FFC measures of energy use *and emissions* when analyzing proposed energy conservation standards”) (emphasis added); 84 Fed. Reg. at 46,835, 46,849.

<sup>28</sup> *Id.* at 46,848, 46,857.

<sup>29</sup> *Zero Zone Inc. v. Dept. of Energy*, 832 F.3d 654, 677 (7th Cir. 2016) (emphasis added). See also *id.* at n.24 (further concluding that the agency also likely had the authority, if not the requirement, to consider environment effects under the first statutory factor on economic impacts, because “[e]nvironmental benefits have an economic impact”).

<sup>30</sup> 49 U.S.C. § 32,902(f).

<sup>31</sup> *Pub. Citizen v. Nat’l Highway Traffic Safety Admin.*, 848 F.2d 256, 263 n.27 (D.C. Cir. 1988) (R.B. Ginsburg, J.) (quoting 42 Fed. Reg. 63,184, 63,188 (Dec. 15, 1977) and adding emphasis to the word *requires*).

<sup>32</sup> *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1203 (9th Cir. 2008); see also *id.* at 1197-98 (indicating that, due to advancements in “scientific knowledge of climate change,” “[t]he need of the nation to conserve energy is even more pressing today than it was at the time of EPCA’s enactment”).

<sup>33</sup> 54 Fed. Reg. 47,916, 47,924, 47,937, 47,940 (Nov. 17, 1989).

<sup>34</sup> 56 Fed. Reg. 22,250, 22,259 (May 14, 1991).

<sup>35</sup> *E.g.*, 62 Fed. Reg. 50,122, 50,143 (Sept. 24, 1997); 73 Fed. Reg. 58,772, 58,814 (Oct. 7, 2008); 79 Fed. Reg. 17,726, 17,738 (Mar. 28, 2014).

economic justification test, assessing the national need for energy conservation (including environmental effects) is a separate and secondary afterthought, dispensable if the agency has already made up its mind. That attitude toward the forgone environmental and other effects of failing to improve GSIL efficiency not only violates a longstanding history of practice; it violates the EPCA and the Administrative Procedure Act as well.

The forgone effects that the agency fails to consider would likely have been large and significant. An October 2019 letter from several U.S. senators indicates that by withdrawing all the lightbulb efficiency standards that were to take effect by 2020, and instead determining that no amended efficiency standard is necessary, the Department of Energy has forgone “around 38 million metric tons per year” of reductions in carbon dioxide emissions.<sup>36</sup> Valued using the social cost of carbon methodology that the Department of Energy has in the past recognized as the best available tool for measuring climate damages,<sup>37</sup> a reduction of 38 million metric tons per year of carbon dioxide emissions would generate about \$1.9 billion per year in climate benefits.<sup>38</sup> A single year of such forgone climate benefits (\$1.9 billion) is therefore even greater than the cumulative net present value of nine years’ worth financial benefits to consumers that the agency calculates will be forgone by not amending the efficiency standards for GSILs (\$1.1-\$1.6 billion).<sup>39</sup>

### ***Misapplication and Misinterpretation of the “Unavailability” Test***

Even as the Department essentially removes the “need for national energy conservation” prong from the statutory definition of “economically justified,” the Department seeks to import a new factor into the definition: unavailability. Specifically, the agency claims it “cannot find economic justification in a standard the purpose of which is to force the unavailability of a product type, performance characteristic or feature in contravention of EPCA.”<sup>40</sup>

To begin, while EPCA does prohibit standards if the agency finds it is “established by a preponderance of the evidence that the standard is likely to result in the unavailability in the United States in any covered product type (or class) of performance characteristics . . . that are substantially the same as those generally available in the United States at the time of the Secretary’s finding,”<sup>41</sup> that test is in a separate section of the statute and is not a listed factor under the definition of “economically justified.” Even if it could somehow be applied to the definition of “economically justified” as an additional factor, it cannot trump the other explicitly listed statutory factors, all of which the agency must consider “to the greatest extent practicable” by weighing all “benefits” against “burdens.”<sup>42</sup>

Additionally, EPCA’s test for “unavailability” sets a fairly high bar, which has not been met here. The finding must be made on the “preponderance of the evidence.” In the proposed determination, the agency implies and assumes that GSILs would become “unavailable,” but never explicitly makes that finding or explains its evidence. Also, the test is for “unavailability,” not just for less availability, nor for more difficult or more costly availability. Table IV.11 of the proposed determination shows GSIL market share distribution in the year 2023 under either a scenario with no new efficiency standards, versus a

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<sup>36</sup> See Sen. Edward Markey et al., Letter to Sec’y Perry, Oct. 11, 2019, EERE-2019-BT-STD-0022-0060.

<sup>37</sup> See *Zero Zone*, 832 F.3d at 678.

<sup>38</sup> Converted to 2018\$, the social cost of carbon for year 2020 emissions is over \$50 per ton. See Interagency Working Group on the Social Cost of Greenhouse Gases, *Technical Update* (2016), [https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc\\_tsd\\_final\\_clean\\_8\\_26\\_16.pdf](https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/scc_tsd_final_clean_8_26_16.pdf).

<sup>39</sup> 84 Fed. Reg. at 46,855 (reporting calculations at both a 3% and 7% discount rate).

<sup>40</sup> 84 Fed. Reg. at 46,858.

<sup>41</sup> 42 U.S.C. § 6295(o)(4).

<sup>42</sup> 42 U.S.C. § 6295(o)(2)(B)(i).

scenario with new efficiency standards that prompts consumers to switch from HIR-type GSILs to other products.<sup>43</sup> Under the “no new standards” scenario, in the year 2023, GSILs of the EL-0 (baseline halogen) and EL-1 (HIR) types together have 11.3% of the residential market share; under increased efficiency standards, they would together have 3.8% of the residential market share, while LEDs, CFLs, and exempted-incandescent slightly increase their market shares.<sup>44</sup> The agency never explains why this level of consumer product switching, with 3.8% of residential consumer purchases still going to HIR-type GSILs, means that GSILs are “unavailable.” To the contrary, the agency even notes that “consumers who are resistant to changing technology” could switch to a kind of shatter-resistant incandescent lamp that is still an incandescent even though it is exempt from the definition of GSILs.<sup>45</sup>

Perhaps most importantly, it is not clear, and the agency never explains, why LEDs, CFLs, and other available products are not “substantially the same” in terms of performance and relevant features. Consumer preferences change, both naturally over time and also in response to regulatory standards, and the agency even broadly concludes that “the standards considered in this proposed determination would not reduce the utility or performance of products under consideration in this proposed determination.”<sup>46</sup> Indeed, the reason consumers so readily switch to LEDs and CFLs in the “consumer choice” scenario is presumably that many consumers view the products as providing substantially the same performance while improving efficiency and delivering cost savings.

Finally, the statute also requires a finding that the proposed standard would be “likely to result in the unavailability.” This language—“likely”—is both forward-looking and probabilistic, and so should require consideration of various reasonable assumptions about what the future might look like if the standards were implemented. Yet it does not seem that the agency considered any reasonable scenarios for technological development. The Department of Energy identified 14 technology options for improving the efficiency of GSILs;<sup>47</sup> eight options were “screened out” due to various considerations,<sup>48</sup> though the agency did not seem to consider how adoption of the regulation could prompt technological development that would change the cost, performance, or feasibility of these options. The agency was left with six options<sup>49</sup> that it concluded were technologically feasible and would not “have a significant adverse impact on the utility of the product . . . or . . . result in the unavailability of any covered product type.”<sup>50</sup> The agency then decided, however, not to model three of the options—“thinner filaments, higher efficiency inert fill gas, or higher efficiency burners”—because the agency “did not believe including those design options would increase the efficacy beyond that achieved by the combination of an IR coating and higher temperature and pressure operation.”<sup>51</sup> However, the agency does not consider whether, in the face of regulatory pressure, technological development would reduce the cost or increase the efficiency of these additional technology options in ways that would bear on whether the standard is “likely to result in the unavailability” of lamps.<sup>52</sup>

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<sup>43</sup> 84 Fed. Reg. at 46,846.

<sup>44</sup> *Id.*

<sup>45</sup> 84 Fed. Reg. at 46,841.

<sup>46</sup> 84 Fed. Reg. at 46,835.

<sup>47</sup> 84 Fed. Reg. at 46,837.

<sup>48</sup> 84 Fed. Reg. at 46,838.

<sup>49</sup> 84 Fed. Reg. at 46,838.

<sup>50</sup> 84 Fed. Reg. at 46,837.

<sup>51</sup> 84 Fed. Reg. at 46,840.

<sup>52</sup> Compare DOE, 2019 TSD at 3-14 to 3-15 (noting, for example, that krypton could both result in higher efficacy and increase the life of the lamp) with 84 Fed. Reg. at 46,840 (dismissing the alternate inert fill gas option without further discussion).

Overall, the Department of Energy has neither explained why the proposed standard would lead to the likely unavailability of products with substantially similar characteristics, nor has it explained why unavailability is at all relevant to—let alone determinative of—the definition of “economically justified.” Instead, the agency uses the slight potential shift in consumer purchases from GSILs to other kinds of lamps as an excuse to forgo billions of dollars in net consumer benefits and environmental benefits.

### ***Problematic Assumptions about Key Inputs, Such as Product Prices, Electricity Prices, and Discount Rates***

The Department of Energy determined that the operational savings from replacing current GSILs with HIR-type GSILs would not payback the increase in upfront purchase price during the expected lifetime of the lamps for most consumers.<sup>53</sup> This conclusion also informed the agency’s further determination that, in the face of a new efficiency standard, many consumers would switch to different lamps.<sup>54</sup> Key inputs into that analysis include estimated product cost, future energy prices, and discount rates. The agency’s estimations of these key inputs are plagued by unexplained choices, a failure to test assumptions, and outright errors.

On product costs, according to the Technical Support Document, the estimated increase in price from a baseline GSIL (\$1.81 in 2018\$) to the HIR (\$7.00 in 2018\$)—i.e., a difference of \$5.19 in 2018\$—could not be calculated directly from market data and so instead is based on “the incremental change in end-user price from the baseline halogen lamp to the more efficient HIR lamp determined in the 2015 IRL ECS final rule”; the 2019 Technical Support Document cites specifically to the 2015 Technical Support Document.<sup>55</sup> However, the 2015 Technical Support Document shows a weighted price difference of just \$2.39 in 2012\$ (\$11.22 minus \$8.83; equivalent to about \$2.62 in 2018\$, according to the CPI Inflation Calculator) between the baseline IRL and the HIR-IRL lamp.<sup>56</sup> That is half the price difference that the Department now attributes to adding the HIR technology to GSILs. Furthermore, the prices from the 2015 TSD were based on an HIR lamp with a rated life of 2,500 hours and initial lumen output of 980 lumens, as compared to a baseline IRL rated at only 1,500 hours.<sup>57</sup> In the current analysis, the agency is attempting to price an HIR-type GSIL with a rated lifetime of only 1,000 hours and only 750 initial lumens, as compared to a baseline GSIL with same lifetime and lumens.<sup>58</sup> The agency never explains why the 2015 price figures for IRLs—which reflected not just an efficiency increase but a significant lifespan increase—would be applicable here to price the addition of HIR technology to GSILs without any corresponding increase in lifetime hours. The agency also does not grapple with the discussion in the 2015 TSD about the tradeoffs between lifetime, lumens, efficiency, and cost. In 2015, the agency “observed lifetime changes for different technologies. For example, a halogen lamp typically has a lifetime of around 1,500 hours, while an HIR lamp typically has a lifetime of 2,500-4,400 hours. DOE

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<sup>53</sup> 84 Fed. Reg. at 46,852.

<sup>54</sup> 84 Fed. Reg. at 46,853.

<sup>55</sup> DOE, 2019 TSD, at 6-4.

<sup>56</sup> DOE, *Final Rule Technical Support Document: General Service Fluorescent Lamps and Incandescent Reflector Lamps* at 7-6 (2014) [hereinafter 2015 TSD]; see also *id.* at 5-55 (showing the specifications for the baseline IRLs (a.k.a. “improved halogen”) and EL-1 for IRLs (a.k.a. “HIR”). The weighted price of \$11.22 is for the HIR-IRL lamp with a 2,500-hour lifespan and 980 initial lumens; for the lamp with a 4,200-hour lifespan and 1,120 initial lumens, the weighted price is \$12.98. 2015 TSD at 7-6. But even the difference between that figure and the baseline (\$4.15 in 2012\$ = \$4.54 in 2018\$), is less than the \$5.19 difference used by the Department in this analysis. The tables at 80 Fed. Reg. 4042, 4,114 (Jan. 26, 2015) report slightly different installed cost figures, but installed costs include taxes and installation costs, not just product prices, and even still, none of those figures would obviously yield the sum used by the Department here. As such, it remains unclear where that figure comes from.

<sup>57</sup> 2015 TSD at 7-6.

<sup>58</sup> 2019 TSD at 6-4.

considered the possibility that manufacturers would produce lamps with a shorter lifetime than the baseline lamps in order to increase efficacy. . . . DOE assumed that the cost of the lamp with a shortened lifetime at EL 1 was equivalent to the cost of the baseline lamp because the lamp would utilize the same technology.”<sup>59</sup> In the current analysis, the Department does not seem to consider how adjusting the lifetime and wattage could affect cost, or whether different lamp options with different lumens or wattage but comparable performance might have a different lifetime, and how such different lifetimes could affect the payback period.<sup>60</sup>

Furthermore, neither the 2015 analysis, and certainly not the 2019 analysis, make clear whether, or how, the Department might have considered how technological development can change costs over time, despite instructions from the Office of Management and Budget to base estimates of costs “on credible changes in technology over time.”<sup>61</sup> In addition to technological development, learning is another way that costs can commonly decrease over time.<sup>62</sup> However, the 2019 Technical Support Document makes clear that while “price learning” effects were applied to CFLs and LEDs, “price learning is assumed to have no effect on the representative GSILs analyzed,”<sup>63</sup> because “GSILs and traditional incandescent lamps represent a mature technology that have reached a stable price point due to the high volume of total cumulative shipments.”<sup>64</sup> The Department never explains why this assumption—that additional price learning cannot occur for “mature technology”—would be true for HIR-type lamps that currently are “not commercially available.”<sup>65</sup>

On future energy prices, the Department relies on the U.S. Energy Information Administration’s “reference case” from the *2019 Annual Energy Outlook*.<sup>66</sup> The Department takes those reference case estimates, which end in year 2050, and then assumes the same trend in prices will continue out to year 2080.<sup>67</sup> As a result, the Department assumes relatively flat energy prices into the distant future.<sup>68</sup> While the *2019 Annual Energy Outlook* does anticipate relatively “flat” residential and commercial prices in the reference case,<sup>69</sup> those estimates hide significant variability within the underlying factors. For example, even in the reference case, an estimated increase in future fuel prices is presumed to be offset by more efficient generators and increased use of renewable energy, while an overall drop in generating costs is offset by increased transmission and distribution costs.<sup>70</sup> If any of those underlying inputs change, prices could change significantly. Indeed, the EIA reports that electricity prices “vary considerably across scenarios” that adopt different, but still reasonable, assumptions about fuel availability and technology.<sup>71</sup> Importantly, the EIA’s reference case does not account for potential future changes in

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<sup>59</sup> 2015 TSD at 5-54.

<sup>60</sup> See 2019 TSD at 5-5 (first adjusting a 3000-hour lifetime lamp down to 1000 hours in order to increase lumens, and then reducing lumens down to 750 in order to decrease wattage from 45 watts to 34.3 watts, but not discussing cost effects or other options for combinations of lifetime, lumens, and wattage). Cf. 2015 TSD at 8B-127 (“Because the LCC and PBP results are highly dependent on product prices, DOE examined sensitivities to the medium lamp price results . . . by considering the low and high prices developed.”)

<sup>61</sup> OMB, *Circular A-4*, at 37 (2003).

<sup>62</sup> *Id.* at 37.

<sup>63</sup> 2019 TSD at 8-8.

<sup>64</sup> 2019 TSD at 9-14.

<sup>65</sup> 84 Fed. Reg. at 46,836.

<sup>66</sup> 84 Fed. Reg. at 46,844.

<sup>67</sup> 2019 TSD at 8-10 to 8-11.

<sup>68</sup> *Id.* at 8-11, fig. 8.2.1.

<sup>69</sup> EIA, 2019 AEO, at 146.

<sup>70</sup> *Id.* at 98.

<sup>71</sup> *Id.* at 98.

laws, including future state- or federal-level policies that could affect electricity prices.<sup>72</sup> The Department of Energy never considers other reasonable assumptions about future electricity prices, and whether such assumptions would change its determinations.<sup>73</sup>

Finally, on discount rates, the Department of Energy uses an average rate of 4.3% for the residential sector, and 8.4% for the commercial sector, in order to calculate lifecycle costs and payback periods (though the Department uses 3% and 7% rates for net present value calculations).<sup>74</sup> The Department relies on data going back to 1995 for the residential rate,<sup>75</sup> and data going back to at least 1998 (as well as “a forty-year geometric average of Federal Reserve data”) for the commercial rate.<sup>76</sup> Given that “[i]nterest rates have fallen steadily for the last three decades, as have most economists’ forecasts for future interest rates,”<sup>77</sup> the Department does not sufficiently explain why such old data is relevant to calculations of future discount rates, nor does the Department test its payback determination against other reasonable discount rate assumptions.

Changes to the estimation of any of these key inputs could change the payback determination, the modeling of consumer decisions to switch to other lamp products, and the net present value calculations. The Department of Energy must test the sensitivity of its key inputs to various other reasonable assumptions. A full weighing of all the benefits and burdens of the proposed efficiency standard will show that the standard is economically justified.

### **Conclusion**

The Department of Energy has mistakenly made a determination that increasing the efficiency of GISLs is not “economically justified,” despite billions of dollars in benefits to consumers and the environment. In making that determination, the Department ignores one required statutory factor, and relies instead almost entirely on a misinterpretation and misapplication of a separate statutory test. The Department never explains why the statute would prohibit a standard simply because it would encourage consumers to switch to even more efficient products that deliver substantially the same, or better, performance. Finally, the Department’s analyses fail to explain or test key assumptions. Instead of depriving the American people of billions of dollars of forgone environmental and financial benefits, the Department should support the speedy transition to more efficient lamps.

Sincerely,

Jason A. Schwartz, Legal Director  
Institute for Policy Integrity  
[jason.schwartz@nyu.edu](mailto:jason.schwartz@nyu.edu)

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<sup>72</sup> *Id.* at 5.

<sup>73</sup> *Cf.* 2015 TSD at 8B-79 (testing “the impacts of high and low growth trends for future electricity prices, as lamp and lamp-and-ballast system operating costs are directly related to future electricity prices”).

<sup>74</sup> 2019 TSD at 8-4; compare *id.* at 10-19.

<sup>75</sup> 2019 TSD at 8-15.

<sup>76</sup> 2019 TSD at 8-22.

<sup>77</sup> U.S. Council of Economic Advisers, Issue Brief: Discounting for Public Policy: Theory and Recent Evidence on the Merits of Updating the Discount Rate (2017) at 2, *available at*: [https://obamawhitehouse.archives.gov/sites/default/files/page/files/201701\\_cea\\_discounting\\_issue\\_brief.pdf](https://obamawhitehouse.archives.gov/sites/default/files/page/files/201701_cea_discounting_issue_brief.pdf).

March 26, 2018

To: Daniel R. Simmons, Principal Deputy Assistant Secretary, Energy Efficiency and Renewable Energy  
CC: Daniel Cohen, Government Member of the Administrative Conference of the United States & Assistant General Counsel for Legislation, Regulation, and Energy Efficiency

From: Jason A. Schwartz, Consultant to the Administrative Conference of the United States on the Marketable Permit Project & Adjunct Professor at New York University School of Law

Subject: Comments on Adding Market-Based Flexibilities to the Energy Conservation Standards Program

I recently served as the consultant to the Administrative Conference of the United States (ACUS) on its recommendations to federal agencies on marketable permits.<sup>1</sup> The Department of Energy now seeks information on adding market-based compliance flexibilities to its Appliance and Equipment Energy Conservation Standards (ECS) Program, particularly in the form of credit trading, feebates, or intra-firm averaging. I submit these comments based on ACUS's recommendations and my research in my role as ACUS consultant. These comments are my own and do not necessarily reflect the views of ACUS members or staff.<sup>2</sup>

Market-based flexibilities have performed well in many regulatory context, by lowering compliance costs, incentivizing innovation, and easing administrative burdens without sacrificing policy objectives. In other regulatory contexts, however, market-based flexibilities may not improve economic efficiency or may undermine policy objectives to an unacceptable degree. Determining whether the ECS Program belongs to the former or the latter category will require a thorough empirical inquiry. The Department of Energy has begun to ask some of the right questions, but the agency has not answered any of them yet, and many additional questions must be tackled to determine whether and how to move forward with market-based flexibilities.

## 1. Will market-based flexibilities improve ECS's economic efficiency without undermining ECS's policy objectives?

The first inquiry the Department of Energy must undertake is to define and empirically assess the problem: What is the yet-unrealized economic efficiency in the ECS program that the agency is trying to achieve with market-based flexibilities, and can that economic efficiency be achieved without compromising net social welfare, distributional fairness, or other policy goals?

### Legal Requirements to Balance Economic Efficiency Against ECS's Purposes

Revisions to ECS regulations must begin with the statute. The agency is required to prescribe the maximum improvement in energy efficiency that is technologically feasible and economically justified, where economic justification is defined by whether total benefits exceed burdens after considering several factors: impacts on manufacturers and competition; impacts on consumers including purchase price, operating costs, and product utility; energy savings; and "the need for national energy . . .

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<sup>1</sup> ACUS, Adoption of Recommendations, 82 Fed. Reg. 61,728 (Dec. 29, 2017). *Also available* at ACUS, Recommendation 2017-4, Dec. 14, 2017, <https://www.acus.gov/sites/default/files/documents/Recommendation%202017-4%20%28Marketable%20Permits%29.pdf> (hereinafter "ACUS Recommendations"). *See also* Jason A. Schwartz, *Final Report on Marketable Permits: Recommendations on Applications and Management* (Dec. 11, 2017), <https://www.acus.gov/sites/default/files/documents/Marketable%20Permits%20Report-final.pdf> (hereinafter "ACUS Consultant's Report").

<sup>2</sup> My other titles include adjunct professor and legal director at the Institute for Policy Integrity at New York University School of Law. These comments do not necessarily reflect the views, if any, of New York University. However, the comments are consistent with the views of the Institute for Policy Integrity.

conservation.”<sup>3</sup> The agency has historically defined the need for national energy conservation to include the need for energy security, energy reliability, environmental benefits, and public health benefits.<sup>4</sup> The U.S. Court of Appeals for the Seventh Circuit confirmed that “[t]o determine whether an energy conservation measure is appropriate under a cost-benefit analysis, the expected reduction in **environmental costs needs to be taken into account.**”<sup>5</sup>

To summarize, the statutory purpose of the ECS program is to reduce energy consumption while maintaining consumer choice and keeping compliance burdens below benefits, in order to save consumers money, advance energy security, and promote environmental objectives. Put another way, decreasing manufacturer costs as a goal unto itself is acceptable *provided* that it does not diminish net social welfare. Decreasing costs while simultaneously improving overall energy conservation would better advance the statutory purpose of the ECS program.

These statutory goals are reinforced by executive orders. Executive Order 12,866 instructs agencies to “assess available alternatives . . . including providing economic incentives . . . such as user fees or marketable permits.”<sup>6</sup> But the same order also instructs agencies to adopt regulations only “upon a reasoned determination that the benefits of the intended regulation justify its costs,”<sup>7</sup> and to “maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity).”<sup>8</sup> More recently, Executive Order 13,783 requires agencies to balance the goals of energy independence with economic growth<sup>9</sup> and to reduce unnecessary regulatory burdens, where what is “necessary” is defined by the public interest and statutory requirements.<sup>10</sup>

**In other words, market-based compliance flexibilities should advance ECS program objectives and increase net benefits, and not just minimize industry costs.** A similar goal is reflected in ACUS’s first recommendation on marketable permits, which instructs agencies to “carefully consider whether such a program will best achieve their policy objectives.”<sup>11</sup>

### Weighing Possible Economic Efficiencies Against Policy Objectives

Market-based mechanisms are typically deployed to reduce compliance costs, incentivize innovation, or ease administrative burdens, ideally with such economic efficiencies channeled back into advancing program objectives, perhaps by making a more stringent standard economically justified. The Department of Energy should clearly define and empirically assess which possible economic efficiency it seeks to advance. The agency should ask itself, for example:

- Do regulated parties or products have sufficiently differing compliance costs such that market-based flexibilities will help prioritize the lowest-cost abatement opportunities?
- Has it been difficult for the agency to accurately discern compliance costs for individual regulated parties and products?

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<sup>3</sup> 42 U.S.C. § 6295j (o)(2)(A)-(B).

<sup>4</sup> E.g., 81 Fed. Reg. 62,980, 62,992 (Sept. 13, 2016); 82 Fed. Reg. 31,808, 31,821 (July 10, 2017) (“DOE maintains that environmental and public health benefits associated with the more efficient use of energy are important to take into account when considering the need for national energy conservation.”).

<sup>5</sup> *Zero Zone v. Dept. of Energy*, 832 F.3d 654, 677 (7th Cir. 2016) (emphasis added).

<sup>6</sup> Exec. Order 12,866 § 1(b)(3).

<sup>7</sup> *Id.* § 1(b)(6).

<sup>8</sup> *Id.* § 1(a).

<sup>9</sup> Exec. Order 13,783 § 1(a).

<sup>10</sup> *Id.* § 1(c).

<sup>11</sup> ACUS Recommendation #1; *see also id.* at page 2 (asking whether a marketable permit program is “the most suitable regulatory tool to achieve an agency’s goal”).

- Are there unrealized opportunities for low-cost abatement and technological advancement among products that are unregulated and unlikely to be regulated?
- Is consumer willingness-to-pay for efficiency (aided in part by the Energy Star program) insufficient to motivate innovation beyond the minimum standards in ways that would be socially beneficial?
- Will the economic justification for future improvements in energy efficiency for particular products depend on reducing costs to manufacturers?
- See the ACUS Recommendations preamble, at pages 2-3, for more questions to determine the suitability of marketable permits to a particular regulatory context.

Assuming the agency can clearly identify an opportunity for improved economic efficiency through use of market-based flexibilities, the next question is whether such flexibilities can be implemented without undermining program objectives or creating unintentional consequences including distributional concerns. (See ACUS preamble, at page 3, on determining when marketable permits are unlikely to be suitable to a regulatory context.) These issues are discussed in greater detail below, for example in the sections on currency and fungibility. But some initial examples of possible concerns will help frame the inquiry going forward.

The market-based flexibilities under consideration will allow some products on the market to be relatively less energy efficient than the baseline regulatory standard; to offset those less-efficient products, other products will be made to perform with even greater energy efficiency. **Such a marketplace could present several types of challenges for maintaining ECS’s policy goals in the face of potential unintended consequences.** For example, through either consumer choice or information asymmetries, it is possible that the purchasers of the less efficient products may systematically be heavier energy users overall. Some manufacturers, for instance, may seek to trade off energy efficiency for performance, and those consumers demanding high-performance/low-efficiency products may be more frequent product users. Under such a market-based regulatory system, national energy consumption would increase as compared to a uniform standard for energy efficiency. Similarly, purchasers of less efficient products could systematically be concentrated geographically, as with a geographically concentrated industry with a willingness to trade off efficiency for other product attributes.<sup>12</sup> Under such a market-based regulatory system, localized energy demand could spike due to the purchasing preferences of local consumers, causing corresponding localized pollution increases compared to under a uniform standard for appliance efficiency.

Another potential problem warrants a more detailed discussion here: consumer choice and confusion.

### The Risk of Consumer Confusion and the Need for Better Labels

One key concern about adding compliance flexibilities that will allow some products on the market to fall below the baseline regulatory standards is the risk of creating consumer confusion. As an energy expert at the Natural Resources Defense Council, Lauren Urbanek, has aptly observed:

Right now, the beauty of the efficiency standards program is that consumer can be confident that any product on the shelf meets a minimum level of efficiency and won’t unnecessarily

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<sup>12</sup> Some energy-intensive industries that use regulated equipment may be geographically concentrated. For example, data centers tend to cluster due to location of their customers and availability of cheap power. See Rich Miller, *Google Data Center Footprint Growing in Southeast*, Data Center Frontier, Jan. 20, 2016, <https://datacenterfrontier.com/google-data-center-footprint-growing-southeast/>; see also Tom Stabile, *Why Big Data Companies Are Building Server Farms in Middle America*, Commercial Observer, Oct. 18, 2017, <https://commercialobserver.com/2017/10/why-big-data-companies-are-building-server-farms-in-middle-america/> (reporting that Apple, Google, Microsoft, and Facebook have all located data centers in Iowa). Though data centers may seek out the most energy efficient equipment, a hypothetical shift in technological performance could change that, and other industries may have similar geographic concentrations.

waste energy. Moving to a model where manufacturers can trade efficiency credits with each other or develop products with varying energy consumption adds a level of complexity that hurts the integrity of the program. Two otherwise-identical products could have drastically different energy use. How will consumers know the difference? They won't be able to tell from looking at the outside of the product.<sup>13</sup>

In other words, unless consumers can easily distinguish energy efficiency differences and can readily understand the financial and environmental consequences, the main purposes of the ECS program—reducing consumer costs, conserving energy, protecting the environment, and preserving consumer choices—will be undermined.

A better EnergyGuide label could help prevent some risk of consumer confusion. Currently, the most detailed EnergyGuide labels estimate yearly electricity use and yearly operating costs, compare those costs with a range of costs for similar models, and reserve space for the Energy Star logo for appliances that voluntarily meet higher energy efficiency ratings.<sup>14</sup> Some other labels may only reveal yearly energy costs compared to a range but omit any calculation of total energy used (like the label for room air conditioners) or may only list a relative thermal efficiency rating and nothing else (like the labels for pool heaters and some gas furnaces).<sup>15</sup> In this Request for Information, the Department of Energy repeatedly analogizes to the credit trading program within the vehicle fuel economy and emissions standards. However, as compared to the EPA/NHTSA Fuel Economy Label,<sup>16</sup> the appliance EnergyGuide label lacks several details that help consumers:

- The Fuel Economy Label discloses not just annual fuel costs, but calculates the total savings or losses compared to the average new vehicle over the duration of typical vehicle ownership (5 years). Not only does this extra calculation give the consumer more useful raw information, but it frames the information with helpful context—not just total gross costs, but savings or loss relative to other options.
- The Fuel Economy Label does not simply compare operating costs on a scale that shows the full range of similar models, as the EnergyGuide label does. Instead, the Fuel Economy Label assigns ratings for fuel economy, greenhouse gas emissions, and smog emissions, on a scale of 1 to 10. These ratings are relative across all vehicle classes,<sup>17</sup> as opposed to the absolute scale of cost savings that appears on the EnergyGuide label for appliances. This relative scale again gives consumers better informational context to aid comparison across product choices.
- The Fuel Economy Label assigns ratings across all vehicle classes, not just vehicles of very similar models. For example, the EnergyGuide label featured on FTC's website is specific to refrigerator-freezers with automatic defrost, side-mounted freezer, and through-the-door ice.<sup>18</sup> Limiting the information in this manner prevents consumers from easily comparing the tradeoff between, for example, energy efficiency versus the optional attribute of having through-the-door ice.
- The Fuel Economy Label directly discloses environmental information, by including ratings for both greenhouse gas emissions and smog, as well as a calculation of carbon dioxide grams per mile. The EnergyGuide label does not include environmental information directly on the label, making it harder for consumers to compare products with different fuel types and to

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<sup>13</sup> <https://www.nrdc.org/experts/lauren-urbanek/changes-standards-program-more-harm-good>

<sup>14</sup> <https://www.consumer.ftc.gov/articles/0072-shopping-home-appliances-use-energyguide-label>

<sup>15</sup> 83 Fed. Reg. 7593, 7604-7607 (Feb. 22, 2018).

<sup>16</sup> <https://www.fueleconomy.gov/feg/Find.do?action=bt1>

<sup>17</sup> 76 Fed. Reg. 39,478, 39,488 (July 6, 2011).

<sup>18</sup> <https://www.consumer.ftc.gov/articles/0072-shopping-home-appliances-use-energyguide-label>

understand and prioritize environmental consequences in their decisions about appliance purchases and uses.

- The Fuel Economy Label features a QR Code for easy scanning for more information. The EnergyGuide label only provides a web link, making additional online information less easily accessible for consumers.

**At a minimum, if the Department of Energy moves forward with adding market-based flexibilities similar to the averaging, banking, and trading allowed for vehicle efficiency standards, it should upgrade its EnergyGuide appliance labels to include the additional information provided on Fuel Economy labels, to help mitigate any consumer confusion.**

An even better approach would be to conduct tests with different label designs and informational content to help further improve consumer choices in conjunction with market-based standards. Additional information that may help consumers navigate the appliance market under a credit trading or feebate system could include: whether the product's energy efficiency falls below or above baseline requirements, whether the product required the purchase of additional credits or payment of a fee to come into compliance, or a letter-based grading system to rate energy efficiency and environmental effects relative to a broad category of appliances.

Note that there may be slightly less concern about consumer confusion for industrial and commercial appliances and equipment as compared to general consumer products. However, even companies are ultimately run by fallible people who would benefit from more information and better context. Indeed, the agency routinely calculates consumer cost-savings for efficiency standards for commercial and industrial equipment, suggesting that commercial actors are not always selecting the appliances that will maximize their long-term profits.<sup>19</sup>

### The Case for Using Cost-Saving Flexibilities to Increase Energy Efficiency Standards

One rationale for adopting market-based flexibilities for the ECS program is if increase efficiency standards could become economically justified once costs to manufacturers are reduced. Note that it is not at all clear that such compliance cost savings are necessary to justify any tightening of current standards; some current standards may still not be set at the maximum efficiency that is technologically feasible and cost-benefit justified now, even without credit trading or feebates. At the same time, it is possible that market-based flexibilities could justify even greater improvements to energy efficiency standards.

Indeed, one way to address concerns that adding market-based flexibilities to the current standards will undermine goals like consumer savings and environmental outcomes is simply to tighten the overall standards in conjunction with adding market-based flexibilities. There is a long history of regulators channeling the cost savings of marketable permits back into furthering policy objectives, such that net regulatory benefits increase even as marginal regulatory costs decrease compared to the status quo. The following passage is from my consultant report to ACUS:

The cost savings offered by marketable permit programs may enable regulators to set a more stringent cap than they could under prescriptive regulation, or may even break a political logjam blocking any regulation at all. Though it may not always happen, the cost savings of trading can be channeled back into more stringency: for any given total compliance cost that is politically acceptable, marketable permits can achieve greater stringency than traditional regulation. . . . Economists have specifically credited the acid rain market's cost savings as making dramatic cuts

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<sup>19</sup> E.g., 77 Fed. Reg. 28,928, 28,972-28,975 (May 16, 2012) (calculating cost savings for standards for commercial heating, air-conditioning, and water-heating equipment).

to sulfur dioxide pollution both possible and politically feasible. The lower costs predicted from trading were also instrumental in negotiating more stringent limits for ozone-depleting substances and California's RECLAIM program, as well as a faster phase-out timeline for lead in gasoline. *EPA claims that trading similarly helped it increase stringency earlier for vehicle emissions standards.* The institution of tradable [fish] catch shares has sometimes, though not always, resulted in lower total allowable catches.<sup>20</sup>

Note especially that the stringency of the vehicle efficiency and emissions standards—the program the Department of Energy repeatedly cites here as a useful analogy to the ECS program—was informed by the cost savings from trading. Specifically, EPA writes: **“The [averaging, banking, and trading or ‘ABT’] provisions are an integral part of the standard-setting itself, and not just an add-on to help reduce costs.** In many cases, ABT programs address issues of cost or technical feasibility which might otherwise arise, **allowing EPA to set a standard that is more stringent than could be achieved without the flexibility provided by ABT programs.** We believe that the net effect of the ABT provisions allows additional flexibility, encourages earlier introduction of emission reduction technologies than might otherwise occur, and does so without reducing the overall effectiveness of the program.”<sup>21</sup>

The Department of Energy has already identified the vehicle ABT program as a useful analogy to—and even a kind of justification for—this new proposal on adding flexibilities to the ECS program. The agency should follow the lead set by the vehicle ABT program and use market-based flexibilities in the ECS program not just to reduce costs, but to help set the optimal energy efficiency standards.

## 2. Legal Authority and Procedure

As already noted, revisions to the ECS program must begin with the statute. Executive Order 12,866's instruction to consider market-based alternatives is cabined by the phrase “to the extent permitted by law,”<sup>22</sup> and the preamble to the ACUS Recommendations also remind agencies that marketable permit programs must be within the agency's statutory authority.<sup>23</sup> The Department of Energy will need to confirm that it has sufficient authority to proceed.

Statutory authority for market-based flexibilities need not be explicit, and several prominent marketable permit programs are based on implicit statutory authority.<sup>24</sup> That said, the statutory framework for the ECS program contains at least one provision that could create some challenges to establishing a market-based mechanism: the anti-backsliding provision. **Feebates in particular could be hard to square with the statute's anti-backsliding requirements,** since a feebate system would allow manufacturers to pay to reduce the energy efficiency of individual products without any guarantee that the lost energy efficiency will be made up elsewhere in the market. The Request for Information suggests one way around the anti-backsliding provision is to layer a class- or category-wide average standard on top of a product-specific minimum standard, and only allow trading and averaging around the former, not the latter. That may satisfy the legal requirements, but as the Request for Information also notes, it would likely reduce somewhat the overall economic efficiency of the program. That said, the loss of economic efficiency could be moderate, depending on the relative stringency of the standards, and the net gains to economic efficiency may still be worthwhile even with a product-specific backstop standard.

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<sup>20</sup> ACUS Consultant's Report at 51 (citations omitted, emphasis added).

<sup>21</sup> EPA, *Greenhouse Gas Emission Standards for Light-Duty Vehicles: Manufacturer Performance Report for the 2015 Model Year* at 5 (2016), <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100PKP1.PDF?Dockey=P100PKP1.PDF>.

<sup>22</sup> Exec. Order 12,866 § 1(b).

<sup>23</sup> ACUS Recommendations at page 2.

<sup>24</sup> See ACUS Consultant's Report at 14-23.

The Department of Energy will have to consider carefully whether it has sufficient implicit statutory authority to create its desired form of market-based flexibilities, or whether the agency must ask Congress for additional authorities. The Department of Energy should communicate with EPA about how that agency's water quality trading guidance handles a similar anti-backsliding provision under the Clean Water Act—though the cross-statute comparison may have limits, as the Clean Water Act has specific exemptions<sup>25</sup> that do not apply under the EPCA. (See ACUS Recommendation #12 on coordinating with and learning from other agencies with more experienced on marketable permits.)

Assuming the Department of Energy has the statutory authority to propose revisions to the ECS program that add market-based flexibilities, the agency should make such changes through notice-and-comment rulemaking. ACUS recommends notice-and-comment rulemaking to create a marketable permit regime, “both in order to reduce uncertainty as to the permanence of the program and to gather public input that may prove beneficial in shaping the program.”<sup>26</sup> With this Request for Information, the agency already seems to be properly headed down that procedural path.

The potential changes under consideration will almost certainly constitute a significant rulemaking, and as such **the agency should plan to undertake a full cost-benefit analysis on the addition of any market-based compliance flexibilities to the ECS program.** The Department of Energy should also conduct a trade impact analysis as part of its regulatory impact analysis, especially in light of the concerns about international trading and regulatory cooperation raised by the Office of Energy Efficiency at Natural Resources Canada in their comments.<sup>27</sup> Undertaking an assessment of impacts to international trade and regulatory cooperation is consistent with the agency's obligations under Executive Order 13,609.

### 3. Credit Currency and Trade Limits: Fungibility, Externalities, and Market Structure and Scope

If the Department of Energy identifies a concrete economic efficiency objective that market-based flexibilities can unlock, and if the agency confirms that it has sufficient statutory authority to implement market-based flexibilities, the next inquiry is whether a credit currency and trading structure can be established that do not create unacceptable negative externalities or negative distributional outcomes. All else equal, a broader market (i.e., allowing trades across manufacturers and across product categories) would be more efficient, as it will create more opportunities to identify the lowest-cost abatement option, aid in market liquidity, and reduce price volatility.<sup>28</sup> That said, constraints on the market's scope and or on types of trades allowed become necessary if a sufficiently fungible currency cannot be established, in order to prevent serious unintended consequences.

#### Credit Fungibility

The units for trading or averaging must be sufficiently fungible across outcomes. The limits of fungibility will affect the structure and scope of the market. To allow averaging within a single manufacturer's line of a single product category or class where all products use the same fuel, a simple currency, like the kilowatt-hours saved over a product's expected life or the rate of energy used per unit of activity, may seem like an obvious choice—assuming such energy usage calculations are reasonably accurate and not cost-prohibitive. **Even such a seemingly straightforward currency design scenario, however, still presents risks of non-fungibility leading to negative policy outcomes.** For example, consumers choosing lower energy efficient appliances under a trading regime could be geographically

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<sup>25</sup> EPA, *Water Quality Trading Toolkit for Permit Writers* 11 (2009).

<sup>26</sup> ACUS Recommendation #3.

<sup>27</sup> <https://www.regulations.gov/document?D=EERE-2017-BT-STD-0059-0018>.

<sup>28</sup> See *generally* ACUS Consultant's Report.

concentrated, leading to higher localized energy consumption and higher associated pollution as compared to under a uniform standard for appliance efficiency.

To develop a workable currency, the Department of Energy may have to determine which policy outcomes it most wants to protect from unintended consequences—consumer costs, energy security, or environmental effects—and whether it cares about outcomes on a regional/local level or only on a national level. Currency options that the agency may want to explore could include: BTUs (or other unit of energy) consumed over product life, consumer savings over product life, or tons of emissions. A hybrid currency could potentially use monetized values of energy security benefits and environmental benefits, along with consumer cost savings, to capture everything the agency cares about. Such an approach may be especially useful to the extent that the ECS’s policy objectives (consumer savings, energy security, and environmental effects) are not well aligned, such that improving one objective may not necessarily improve all other objectives in proportion—as may occur, for example, in trades across fuel types with different environmental outcomes. However, such an approach could add some complexity and expense.

Other factors that the agency will need to consider as it creates a currency include: do different products have different rebound effect potentials, especially as energy efficiency is pushed far above or below the baseline standard due to trades?; **are different products used at different times of day, such that trades will shift energy demand and possibly create new demand spikes?; does the accuracy of estimates of lifespan and average energy use over that lifespan differ across products?;** do different manufacturers have different regional distribution networks for marketing their products?

### Mechanisms to Counteract Lack of Fungibility

If a sufficiently fungible currency cannot be created, one response is to preemptively restrict trades with potentially dissimilar outcomes with respect to negative externalities or distributional consequences. Trading could be limited across product categories, across manufacturers, or across fuel types. However, such restrictions will reduce overall economic efficiency and create thinner markets, in which the risk of market manipulation may be heightened.

Another potential solution to this problem would be creating some institutional review mechanism, wherein some agency official or computer algorithm checks certain proposed trades for undesirable outcomes and clears trades before they can occur. Though such an approach can work well in certain contexts,<sup>29</sup> it is not clear how well suited this approach would be to the ECS program.

Another option to manage lack of fungibility in the currency is to impose a trading ratio that will offset some of the risk of undesirable consequences. By requiring manufacturers to hold more than one credit to offset each unit of decreased energy efficiency—for example, purchasing credits representing a conservation of two kilowatt-hours over a product’s lifespan to offset the increased consumption by another product of one kilowatt-hour over its lifespan (a 2:1 ratio)—the increased stringency acts as a check against undesirable deviations from the baseline. Because some trading ratio may already be desirable to handle other types of uncertainty (such as uncertainty over additionality, or product malfunctions that change energy consumption, or product recalls that take credit-generating appliances off the market), adding an additional trading ratio to handle uncertainty over fungibility may be administratively convenient. That said, a trading ratio may at times unnecessarily restrict otherwise efficient trades, thus limiting the overall economic efficiency of the program.

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<sup>29</sup> Jonathan Nash & Richard Revesz, *Markets and Geography: Designing Marketable Permit Schemes to Control Local and Regional Pollutants*, 28 *Ecol. L. Q.* 569 (2002) (describing computer algorithm to approve trading credits in criteria pollutants).

Because the trading ratio approach works by increasing stringency to create a cushion for error, that solution suggests the final approach: **simply increasing the stringency of the standards to counteract the negative externalities caused by imperfectly fungible currencies.** For example, in creating the acid rain trading program, Congress to some extent used increased stringency to counteract concerns about pollution hot spots: “[I]t was understood that the greater the overall size of the reduction, the more indifferent society could be to the spatial impacts of trade.”<sup>30</sup> So long as the more stringent standard remains cost-benefit justified and technologically feasible, this is likely the preferred approach, since it would not restrict any otherwise-efficient trades from occurring.

### Market Structure: Credit Trading, Cap-and-Trade, Feebates, and Rates versus Quantity

Creating the currency for trading goes hand-in-hand with designing the market structure. The Request for Information proposes as possible options a credit trading structure (wherein manufacturers can generate as many credits for sale as they want by exceeding the energy efficiency requirements set by a baseline, product-specific standard) and a feebate system (wherein manufacturers with products falling below an efficiency “pivot-point” pay a fee, while products with better efficiency earn a payment). What the Department of Energy refers to as “averaging” is really just restricting a trading structure to intra-firm trades.

The Request for Information does not mention another classic structure for market-based flexibilities: the cap-and-auction or cap-and-trade system. Under a cap-and-auction program, the Department of Energy would determine how many credits to make available per compliance period, most likely based on total energy consumption over product lifetime. Though setting the proper cap can be administratively challenging, as it requires reasonably accurate predictions of consumer demand for products and lifetime energy use per products, these challenges can be overcome. Cap-and-auction or cap-and-trade systems, for example, have performed well in controlling power plant emissions, despite similar uncertainty over predictions for fluctuating electricity demand. There are many tools, such as credit banking and reserve pools, that can manage the uncertainty around setting the proper cap. Moreover, **because predictions about energy use over product lifetimes may already be necessary to operationalize other trading structures under consideration, such as inter-category credit trading, uncertainty around such predictions should not bar consideration of a cap-and-auction structure here.** Because cap-and-auction programs have advantages over other trading structures—by guaranteeing an energy conservation outcome and preventing windfalls to manufacturers that were going to increase efficiency anyway—the cap-and-auction structure deserves consideration by the Department of Energy. (See my ACUS report for more details on how permit auctions and other fee-based regulatory structures can be implicitly authorized by statute.)

Certain market structures cannot guarantee an overall reduction in energy use. For example, a feebate program cannot stop a disproportionate number of manufacturers from choosing to under-comply and pay the fee (rather than meet or exceed the standard), thereby collectively lowering overall energy efficiency.<sup>31</sup> Similarly, a rate-based trading structure would only limit the rate of energy used per

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<sup>30</sup> *Id.*

<sup>31</sup> In theory, marketable permits and regulatory fees could be somewhat interchangeable, and setting the pivot point correctly could allow the agency to calibrate the stringency of a feebate system. However, marketable permits and regulatory fees may work differently under real-world uncertainty. “For example, uncertainty about abatement costs may mean that actual emissions reductions cost more than the regulator anticipated. In that scenario, a cap-and-trade program can still guarantee the desired environmental outcome by virtue of the hard cap on total emissions, but the increased demand for allowances will mean the program’s total compliance costs will exceed expectations. Uncertainty over abatement costs interacts with a tax in exactly the opposite way: per-unit compliance costs will still be guaranteed because firms facing costly abatement options can opt to pay the set tax, but as more firms opt to pay the tax rather than abate, total emissions will exceed expectations. The same pattern occurs with uncertainty about future economic growth: a cap-and-trade program will

amount of activity, and not the total active use of the product, and so a rate-based program cannot guarantee a target level of energy conservation. Rate-based trading structures cannot counteract the potential for the rebound effect, nor can they offset an increase in overall consumer demand for appliances. By contrast, **a quantity-based cap or credit program, which limits energy consumed over a product's life rather than energy consumed per unit of appliance activity, can avoid certain rebound problems and better guarantee an overall energy conservation outcome.**

Certain market structures also raise problems of additionality: that is, rewarding manufacturers for improvements in energy efficiency they would have designed anyway, instead of rewarding only “additional” improvements. The feebate system most obviously directly rewards manufacturers with payments for improvements that they might have made anyway, but any system that allows manufacturers to generate and sell credits raises similar concerns. Setting the proper baseline is essential to ensure that trades or feebate payments are only for additional improvements to energy efficiency. See below for more details on additionality.

### Other Elements of Currency Design

ACUS's second recommendation on marketable permits states: “Agencies should establish and publish clear guidelines containing all of the features of marketable permit programs, including expectations as to the longevity of marketable permits and the precise obligations or authorizations that they convey.”

**Part of proper credit design, therefore, is precisely defining obligations. One key obligation is liability.** Specifically: is the credit buyer or credit seller responsible if the credit turns out to be fraudulent or to not achieve the promised energy efficiency gain for any reason, such as product malfunctions, recalls, post-sale returns, or any other unanticipated development? In light of the recent scandal over Volkswagen using a defeat device to cheat on emissions tests—what if Volkswagen had used the defeat device to generate credits for sale?—clear parameters for liability are essential.

To the extent the Department of Energy uses the averaging, banking, and trading program for the vehicle efficiency and emissions standards as a guide, the agency should avoid any problematic design aspects of the vehicle ABT program. For example, that program does not fully reflect upstream emissions. When factoring environmental outcomes into currency design and fungibility, **the Department of Energy should count the full-fuel cycle energy use and emissions, including not only the energy used in generating and distributing electricity and natural gas, but the emissions produced in extracting, processing, and transporting fuels.** This approach is consistent with the agency's existing Full-Fuel Cycle methodology to estimate energy savings and reductions in greenhouse gas emissions from energy conservation standards.<sup>32</sup>

### Other Factors on Setting the Market's Scope

As already mentioned, provided policy objectives and distributional goals are not compromised, a broader market is more economically efficient and therefore preferred. By allowing the full suite of potential trades—*intra-firm averaging, inter-manufacturer trading, and inter-category, -class, and -fuel trading*—a broader market would create more chances to identify and prioritize the lowest-cost abatement opportunities, improve liquidity, and control price volatility.

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continue to guarantee a limit on emissions even if demand for the polluting activities rises with economic growth; a tax, on the other hand, cannot stop firms from choosing to simply pay the tax to increase emissions in order to increase output. Some theories predict that marketable permits will perform better than fees in the face of imperfect enforcement; some theories suggest that when marketable permit prices fluctuate too much, fees are preferable for sending the kind of consistent price signals necessary for long-term capital investments.” See ACUS Consultant's Report at 4.

<sup>32</sup> 76 Fed. Reg. 51,281 (Aug. 18, 2011) (statement of policy for adopting full-fuel cycle analyses into energy conservation standards program); see also Policy Integrity, Comments on Full Fuel Cycle Analysis, [http://policyintegrity.org/documents/10.19\\_10\\_Comments\\_on\\_DOE\\_Full\\_Fuel\\_Cycle\\_.pdf](http://policyintegrity.org/documents/10.19_10_Comments_on_DOE_Full_Fuel_Cycle_.pdf)

Another advantage of a broader market relates to anti-competitive behavior. Manufacturers that directly compete in the appliance markets may be tempted to use the permit market to anti-competitive ends. For example, manufacturers could hoard credits to drive up permit prices and so increase their rivals' production costs in order to reduce their rivals' share of the product market. **In a broader, unified market, any two actors competing in the permit market are relatively less likely to also be competing in the appliance market, as compared to in narrower, thinner markets.** It is also more difficult to hoard permits and corner the market in a broader, more liquid permit market. That said, **position limits on buying and holding permits may be desirable to further preempt attempts to corner the market.**

As another way to broaden the permit market, the agency should reconsider any exemptions to energy conservation standards that may have previously been created for small businesses under the Regulatory Flexibility Act. Market structures like a cap-and-auction program effectively place all manufacturers on relatively equal ground, facing the same per-permit compliance costs, such that some small business exemptions may no longer be justified.

## 4. Setting Caps, Baselines, and Allocations

### Setting and Reevaluating the Appropriate Target Over Time

Setting the right target from the start is of paramount importance. As already noted several times, the level of stringency is crucial to avoid problems with fungibility, externalities, and additionality. Under its statutory authority, the Department of Energy should continue to select the maximum efficiency standard that is technologically feasible and cost-benefit justified.

Fine-tuning the standard over time as technology improves and economic conditions change is always important, but may be especially important in establishing a market-based regulatory system. **The confidence of the public and regulated parties in the permit market's economic efficiency and policy effectiveness may depend on the agency's ability to adjust targets as information comes in on the market's performance in early years.** The preamble to the ACUS recommendations notes the importance of an agency having in place the resources and commitment to reevaluate the appropriate target level of activity over time. ACUS's tenth recommendation advises agencies to collect the data necessary to assess the market's economic efficiency and policy effectiveness over time, and the eleventh recommendation instructs agencies to publish appropriate data to help the public also gauge program effectiveness.

Though the statute requires the agency to reconsider standards at least every six years,<sup>33</sup> there is an ongoing pattern of the agency often missing deadlines.<sup>34</sup> **The Department of Energy should move forward with a market-based program only if it can make firm commitments to collect the necessary data to reevaluate the standard and to conduct such a review in a reasonable time.** At least every six years is required, but perhaps every few years would be more advisable during the program's early years. One way to make a firm commitment to review the standards is to create consequences for failing to review, such as prospectively scheduling automatic increases to the standard's stringency (within the bounds of statutory criteria) if no review is completed on time.

### Additionality: Baseline, Offsets, Credit Stacking, and Leakage

ACUS's sixth recommendation on marketable permits advises agencies to "verify[ ] that credits represent *real* offsets from regulated activity."<sup>35</sup> As my report as consultant to ACUS further explains, to

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<sup>33</sup> 42 U.S.C. § 6295(m).

<sup>34</sup> Appliance Standards Awareness Project, *Missed Deadlines for Appliance Standards*, [https://appliance-standards.org/sites/default/files/ASAP\\_Overdue\\_Standards\\_January\\_2018.pdf](https://appliance-standards.org/sites/default/files/ASAP_Overdue_Standards_January_2018.pdf)

<sup>35</sup> ACUS Recommendation #6 (emphasis added).

be “real,” credits must be “additional,” quantifiable, sufficiently certain and permanent, and not double counted.<sup>36</sup>

***Additionality and Baselines:*** An additional credit reflects actions that would not have occurred without the financial incentive provided by the regulatory market. In other words, if a manufacturer would have increased appliance efficiency above the baseline standard no matter what, rewarding that increased efficiency with credits would be neither additional nor real. As another example, if different standards are set based on appliance size or weight, manufacturers could be incentivized to alter their appliances’ size such that a less stringent baseline standard would apply, allowing the manufacturer to earn more credits—but such credits would be neither additional nor real.<sup>37</sup>

Additionality concerns have long plagued marketable permits programs. For example, in the vehicle efficiency credit program, some credits are currently awarded to firms that have historically and voluntarily over-complied with their regulatory standards anyway.<sup>38</sup> Some analysts have argued that, because credits banked early under the vehicle ABT program will expire and because the stringency of the vehicle efficiency standards will increase over time, such problems of additionality will be minimized over the long term.<sup>39</sup> **The Department of Energy should consider following the vehicle ABT program’s response to additionality by setting expiration dates for banked credits and by prospectively planning to increase the stringency of the baseline standards over time.**

***Quantification and Uncertainty Trading Ratios:*** Related to additionality, another risk is awarding credits for energy conservation outcomes that ultimately do not materialize as planned. Most importantly, the calculations used to assign credits, such as estimates of energy use over product lifetime, will likely be methodologically challenging and subject to uncertainty.<sup>40</sup>

In other marketable permit programs, like water quality trading, regulators facing uncertain quantifications of credits often turn to trading ratios. **Trading ratios adjust for uncertainty by requiring more credits than even the best available quantification tools would predict are needed to offset the regulated activity.** For example, a common uncertainty ratio for water quality trading is 2:1, requiring at least two credits to offset a single ton of emissions. EPA also advises state water quality regulators to apply conservative assumptions to credit calculations as appropriate to buffer against uncertainty. The Department of Energy should consider the role of trading ratios and conservative assumptions to respond to uncertainty around credit quantification and outcomes.

***Leakage and Permanence:*** Credits must represent some degree of permanence and guaranteed execution. Product malfunctions that change energy consumption, product recalls that take credit-generating appliances off the market, post-sale returns, or other various unanticipated developments could result in credits not delivering the expected energy conservation results over time. Such issues underscore the importance of consistently monitoring both the permit and product markets.

The classic type of leakage in permit markets—where a project earns credits for reducing an activity that ultimately is just shifted elsewhere, like rewarding carbon credits for saving a forest from logging even

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<sup>36</sup> ACUS Consultant’s Report at 55-57.

<sup>37</sup> In their comments, Resources for the Future notes that, in vehicle regulation by weight, manufacturers may increase weight to lessen their fuel economy requirements, and note that standards for refrigerators, for example, are currently partly by size. <https://www.regulations.gov/document?D=EERE-2017-BT-STD-0059-0025>.

<sup>38</sup> See ACUS Consultant’s Report at n.486, and p.55 for other examples.

<sup>39</sup> Benjamin Leard & Virginia McConnell, *New Markets for Pollution and Energy Efficiency: Credit Trading under Automobile Greenhouse Gas and Fuel Economy Standards*, (RFF Paper).

<sup>40</sup> As Resources for the Future and other commenters note, tracking credits by, for example, calculating lifetime energy use, is a non-trivial and potentially costly undertaking for administrators.

as the same level of logging simply shifts to another forest—may not have an immediately obvious analog in the appliance context. However, a somewhat related issue could easily arise. Currently, appliance manufacturers that sell in the U.S. market make products that all meet minimum efficiency standards, and due to economies of scale likely sell some similar products with similar efficiencies abroad, even in foreign markets that do not necessarily have similar regulatory standards for efficiency. However, the compliance flexibilities contemplated in this Request for Information will allow some manufacturers to make less efficient products for sale in U.S. markets. **Due to the same economies of scale, those manufacturers may also export similarly less efficient products to foreign markets that lack minimum standards for efficiency. In that way, adding compliance flexibilities to the U.S. ECS program could affect worldwide energy usage, and associated emissions, in negative ways.** Because some potential emission increases abroad, including foreign increases of greenhouse gases and mercury pollution, will directly affect U.S. public health, environmental quality, and social welfare, the Department of Energy should carefully consider the negative repercussions of any such international leakage caused by adding compliance flexibilities to the ECS program.

**Double Counting and Credit Stacking:** A new permit market for the ECS program could interact directly or tangentially with other regulatory and voluntary credit markets. In particular, ECS credits could become linked with renewable energy credit markets and greenhouse gas credit markets. For example, North Carolina allows utilities to use energy efficiency programs to meet a portion of their REC (renewable energy credit) requirements.<sup>41</sup> Credit stacking could occur if a single project is allowed to generate credits for sale both in the ECS permit market and in some other related permit market. The concern here is essentially a variation of additionality: by allowing the same activity to count as credit in two different programs, are regulators inefficiently rewarding behavior that would have happened anyway?

The Request for Information begins to ask the right kinds of questions, by calling for information on how compliance flexibilities for the ECS program would interact with EnergyStar and utility product rebates. **The Department of Energy should complete the inquiry by thoroughly surveying how compliance flexibilities for the ECS program could interact with other state-based, federal, or voluntary permit markets, including for renewable energy credits and greenhouse gas credits.**

**Offsets:** The preamble to the ACUS recommendations recognizes that one advantage of marketable permit programs is tapping into unrealized opportunities for significant technological developments by unregulated actors. Unregulated appliances with the potential for important technological developments include set-top boxes and televisions, among other key categories.<sup>42</sup> **The Department of Energy should carefully consider whether to allow unregulated appliances to generate offset credits.** On the one hand, offsets can greatly enhance a market-based program's overall economic efficiency and can spur innovation in otherwise unregulated sectors. On the other hand, offsets—like all credits—must be verified as real, and the additionality of offsets can often be challenging to monitor.

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<sup>41</sup> DOE, *Renewable Energy and Energy Efficiency Portfolio Standard*, <https://energy.gov/savings/renewable-energy-and-energy-efficiency-portfolio-standard> (describing North Carolina's program); North Carolina Utilities Comm., *Biennial Report Regard Proceedings for Electric Power Suppliers* 9 (2013), <http://www.ncuc.net/reports/EE-DSM%20Report.pdf> (noting Duke's residential smart saver energy efficient products program for lights, HVAC, and heat pumps).

<sup>42</sup> See Peter Ross, *Appliance & Equipment Efficiency Standards: A Roadmap for State & Local Action* (2017), [http://columbiaclimatelaw.com/files/2017/07/Ross\\_2017-07\\_Appliance-Equipment-Efficiency-Standards-Working-Paper-RFS.pdf](http://columbiaclimatelaw.com/files/2017/07/Ross_2017-07_Appliance-Equipment-Efficiency-Standards-Working-Paper-RFS.pdf) (listing unregulated products, including service lamps, 3-way incandescent lamps, certain general service lamps, shatter-resistant lamps, circulator pumps, computer and battery backup systems, fans and blowers, hearth products, high-intensity discharge lamps, light emitting diode lamps, luminaires, manufactured housing, set-top boxes, televisions).

## Temporal Allocation Issues: Banking, Compliance Deadlines, and Reserves

Allowing manufacturers to bank credits for use in future compliance periods can be crucial to letting regulated sources hedge against permit price volatility and unexpected economic changes. On the other hand, current regulated activities may not be perfectly fungible with regulated activities far in the future, and banking can increase the incentive for noncompliance, because any permits not cashed in at the end of a compliance period still have value in future years. For example, in the gasoline lead phase-down trading program, banking credits lead to a strong incentive in the program's early years for fraud and noncompliance. As mentioned above, having expiration dates for early banked credits, as in the vehicle ABT program, may be important to addressing additionality in that permit market.

Another temporal issue is how the agency should time the awarding of credits versus compliance deadlines. Credits could be awarded—in order of increasing certainty about the realness of credits—based on future sales predictions, at the time of sale of products, at the end of a quarterly or yearly sales period, or over time as products' lifetime energy usage is checked and verified. Depending on such choices, **the Department of Energy should consider requiring manufacturers to hold a reserve of excess credits to make up, in near-real time, for any unanticipated shortfalls in earned credits at the end of a compliance period.** Unused reserves could then be banked as credits for future compliance periods, perhaps for a limited duration. ACUS's ninth recommendation advises agencies to consider both reserve pools and permit durations as tools to manage price volatility, but they are also useful to manage uncertainty about compliance obligations.

## Allowing Facilitators and the Public to Participate

The Department of Energy will need to determine who can purchase and sell credits. ACUS's fourth recommendation advises agencies to allow market facilitators and the general public to participate in markets, in order to promote liquidity and price discovery.

## 5. Oversight

ACUS offered several detailed recommendations on oversight of permit markets that the Department of Energy should closely consider.

**ACUS Recommendation 5:** The oversight of secondary permit and derivative markets can present challenges for an agency with relatively limited experience overseeing such markets. The Department of Energy should, as ACUS's fifth recommendation advises, consider working with other agencies with valuable experience in such areas, like the Commodity Futures Trading Commission on oversight of secondary and derivative markets, and the Federal Trade Commission and Department of Justice on possible anti-competitive effects resulting from the interaction of the appliance product market and ECS permit market.

**ACUS Recommendation 6:** To ensure compliance with marketable permit programs, agencies need to track permit ownership and transaction, and verify credits. As further explained in the consultant report, unique serial numbers are advisable, as is near-real time tracking. One key question for the ECS program will be whether current efficiency test procedures are adequate for purposes of verifying credits. The Department of Energy may also consider employing third-party verification for awarding and monitoring credits, and ACUS's recommendation includes further guidance on use of third-party credit verifiers.

**ACUS Recommendation 7:** In designing market-based flexibilities, agencies should ensure it has the resources and regulations to require noncompliant parties to come into compliance, with sanctions that

are of sufficient certainty and size to deter noncompliance.<sup>43</sup> The Department of Energy will have to analyze whether its current sanctions are adequate to deter noncompliance after factoring in the profit motive that a credit trading or feebate system adds to the regulated parties' calculus on compliance.

**ACUS Recommendations 8 and 9:** Agencies should develop adequate oversight tools to prevent fraud, manipulation, and extreme price volatility in permit markets. The Department of Energy should, for example, learn from EPA's experiences with volatility and claims of manipulation in its Renewable Fuel Standard credit market. In addition to circuit breakers and safety valves, the Department of Energy should consider setting position limits for purchasing and holding of credits.<sup>44</sup>

**ACUS Recommendations 10 and 11:** The Department of Energy should plan to collect and disseminate data on the operation of its market-based flexibilities, including data on transactions, prices, holdings, and compliance rates. Timely dissemination of sufficient data is essential to facilitate price discovery and allow market actors to make efficient decisions,<sup>45</sup> and to allow the public to assess the effectiveness of the program in efficiently meeting regulatory objectives.

**ACUS Recommendation 13:** The Department of Energy should develop a clear communications policy for announcements about design or enforcement issues for any market-based program, to prevent information asymmetries that could move the market. One such potential issue is announcements over pilot programs and phasing in covered products over time.

## 6. Criteria for Pilot Program

The Request for Information asks for suggestions on designing a pilot program. Several criteria can be drawn from these comments, including:

- The agency should be reasonably confident that a sufficiently robust market is feasible for the product(s) chosen for a pilot program. This requires interest and participation by regulated entities that have, or can develop, sufficient knowledge to make efficient decisions in the market. Both the number of regulated entities and number of potential market facilitators will factor into this assessment.
- The agency should be able to make reasonably accurate estimates of energy use over the chosen product's lifetime, to facilitate studying fungibility issues with different currency designs.
- The agency should be certain that the product chosen for the pilot will not result in consumer confusion. The best way to mitigate potential consumer confusion, even among industrial and commercial customers, is to improve the label design for the chosen product.
- To mitigate concerns about fungibility, additionality, and uncertainty, the agency should select for the pilot study a product for which the baseline standard's stringency can be increased as the market-based flexibilities are brought online.

Finally, the success or failure of a pilot study should not be judged too quickly, as it takes time for permit markets to develop.

Sincerely,

Jason A. Schwartz

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<sup>43</sup> By comparison, there is considerable uncertainty over the size of EPA's penalties for noncompliance with its vehicle emissions trading program. See Leard & McConnell.

<sup>44</sup> See ACUS Consultant's Report.

<sup>45</sup> See *id.* (on relative lack of transparency over prices in the CAFE/ABT program).