

# Seventh Circuit Review

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Volume 12 | Issue 1

Article 9

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5-1-2017

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### Recommended Citation

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## THE SOCIAL COST OF CARBON: CAN WE AFFORD IT?

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Cite as: Matthew Kita, *The Social Cost of Carbon: Can We Afford It?*, 12 SEVENTH CIRCUIT REV. 236 (2016), at [http://www.kentlaw.iit.edu/Documents/Academic Programs/7CR/v12-1/kita.pdf](http://www.kentlaw.iit.edu/Documents/Academic%20Programs/7CR/v12-1/kita.pdf).

### INTRODUCTION

The Social Cost of Carbon (SCC) is a phrase that many people have never heard. This phrase, however, represents one of the most important calculations in environmental and energy regulation. The SCC is defined by the Environmental Protection Agency as “an estimate of the economic damages associated with a small increase in carbon dioxide (CO<sub>2</sub>) emissions, conventionally one metric ton, in a given year.”<sup>1</sup> The SCC allows climate change policymakers to calculate the benefit in regard to the reduction of CO<sub>2</sub> emissions.<sup>2</sup> The calculation of the SCC has allowed federal agencies to conduct a proper cost-benefit analysis (CBA) of environmental regulatory

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<sup>1</sup> John Wihbey, *Understanding the Social Cost of Carbon—and Connecting It to Our Lives*, YALE CLIMATE CONNECTIONS (Feb. 12, 2015), <http://www.yaleclimateconnections.org/2015/02/understanding-the-social-cost-of-carbon-and-connecting-it-to-our-lives/>.

<sup>2</sup> Jason S. Johnston, *The Social Cost of Carbon*, REG., Spring 2016, at 36, <https://object.cato.org/sites/cato.org/files/serials/files/regulation/2016/4/regulation-v39n1-4.pdf>.

actions.<sup>3</sup> The Department of Energy (DOE) is responsible for imposing mandatory energy conservation standards to decrease energy consumption and decrease CO2 emissions.<sup>4</sup> A central policy of the DOE is to ensure national safety by addressing its “energy, environmental and nuclear challenges through transformative science and technology solutions.”<sup>5</sup>

The DOE is responsible for imposing mandatory energy conservation standards.<sup>6</sup> In doing so, the agency must review these standards and, when necessary, implement new standards.<sup>7</sup> The implementation of new standards requires the DOE to abide by certain statutory requirements.<sup>8</sup> One statutory requirement mandates that the agency to ensure the standards are technologically feasible and economically justified.<sup>9</sup> This economic justification requirement tasks the DOE with conducting a cost-benefit analysis.<sup>10</sup>

In *Zero Zone, Inc. v. United States Department of Energy (Zero Zone)*, the Seventh Circuit addressed a case involving a CBA performed by the DOE, in which the agency used the SCC as a factor in its analysis.<sup>11</sup> The DOE implemented new regulations, known as The New Standards Rule which reduced the standard of energy allowance for commercial refrigeration equipment (CRE).<sup>12</sup> The DOE performed a cost-benefit analysis to ensure the New Standards Rule satisfied the statutory framework by being economically justified.<sup>13</sup> Policies are considered to be economically justified when the benefits

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<sup>3</sup> *Id.*

<sup>4</sup> *Zero Zone, Inc. v. U.S. Dep’t of Energy*, 832 F.3d 654, 662 (7th Cir. 2016).

<sup>5</sup> *Mission*, DEP’T OF ENERGY, <http://energy.gov/mission> (last visited Nov. 20, 2016).

<sup>6</sup> *Zero Zone, Inc.*, 832 F.3d at 662.

<sup>7</sup> *Id.*

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

<sup>9</sup> *Id.*

<sup>10</sup> *Id.*

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

<sup>12</sup> *Id.* at 664.

<sup>13</sup> *Id.* at 666.

of the standard exceed its burdens.<sup>14</sup> While the benefit of the standard may exceed the burden, the burden can still result in a staggering figure that will fall on the shoulders of manufacturers.<sup>15</sup> However, on the opposite end of the spectrum, the benefit can outweigh the cost by providing a net benefit to consumers; which was precisely what the New Standards Rule accomplished by providing a benefit between \$4.93 and \$11.74 billion.<sup>16</sup> The DOE must balance the costs and the benefits to ensure the burden is not too great for manufacturers, which will likely then be transferred onto consumers.

However, the benefit may exceed the burden even though some manufacturers may be unable to bear the costs.<sup>17</sup> In *Zero Zone*, *Zero Zone, Inc.*, Heating Refrigeration Institute, and North American Association of Food Equipment Manufacturers (collectively, Petitioners) challenged the regulations imposed by the DOE, as well as the inclusion of the SCC when conducting a cost-benefit analysis.<sup>18</sup> The Seventh Circuit agreed with the DOE and upheld the use of the SCC to project the harms caused by carbon dioxide emissions.<sup>19</sup>

Part I of this article provides an overview of the SCC. Part II provides an overview of relevant statutes and case law that provides a foundation for agencies to consider the SCC. Part III examines the facts of *Zero Zone* and the court's reasoning in upholding the use of SCC. Finally, Part IV will explain why the Seventh Circuit's use of the SCC in a regulatory cost-benefit analysis was appropriate.

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<sup>14</sup> 42 U.S.C.A. § 6295(o)(2)(B) (West, Westlaw through Pub. L. No. 114-244).

<sup>15</sup> See *Zero Zone, Inc.*, 832 F.3d at 666 (“DOE then determined that the development of new CRE would cost manufacturers between \$93.9 and \$165 million”).

<sup>16</sup> *Id.* at 666.

<sup>17</sup> *Id.* at 683. The DOE concluded that “small businesses will likely have greater increases in component costs than large businesses, and may have greater difficulty obtaining credit.” *Id.*

<sup>18</sup> *Id.* at 667.

<sup>19</sup> *Id.* at 660.

## THE SOCIAL COST OF CARBON

The SCC has become one of the most important potential factors in an environmental cost-benefit analysis. The SCC has the ability to tip the scales in favor of a standard or regulation being considered beneficial as opposed to burdensome. For example, in 2006 the Environmental Protection Agency estimated the industry cost of its greenhouse gas tailpipe regulation for light-duty gasoline-powered cars and trucks to be around \$350 billion.<sup>20</sup> The agency concluded that the regulation would result in a \$280 billion public benefit.<sup>21</sup> At this point the burden outweighed the benefit, which rendered the regulation as economically unjustified. However, the Environmental Protection Agency then added the SCC as a potential benefit that can be quantified.<sup>22</sup> The regulation's net cost of \$70 billion was suddenly extinguished, and the regulation resulted in a net public benefit of \$100 billion.<sup>23</sup> Thus, the SCC has the potential to make a major impact when evaluating the effectiveness of environmental and energy regulations. The following section analyzes the development of the SCC and how it is calculated.

A. *The Ninth Circuit Requires Administrative Agency to Consider CO<sub>2</sub> Emissions*

In 2008, the Ninth Circuit reviewed a petition by eleven states, District of Columbia, the City of New York, and four public interest organizations that challenged a rule issued by the National Highway Traffic Safety Administration.<sup>24</sup> The rule set corporate average fuel economy standards for light trucks, minivans, and pickup trucks.<sup>25</sup> The

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<sup>20</sup> Johnston, *supra* note 2, at 36.

<sup>21</sup> *Id.*

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

<sup>23</sup> *Id.*

<sup>24</sup> *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1181 (9th Cir. 2008).

<sup>25</sup> *Id.*

petitioners argued the rule was arbitrary, capricious, and contrary to the Energy Policy and Conservation Act because:

- (a) the agency's cost-benefit analysis does not set the [corporate average fuel economy] standard at the maximum feasible level and fails to give consideration to the need of the nation to conserve energy; [and] (b) its calculation of the costs and benefits of alternative fuel economy standards assigns zero value to the benefit of CO<sub>2</sub> emissions reduction.<sup>26</sup>

The National Highway Traffic Safety Administration argued that there is an "extremely wide variation in published estimates of damage costs from greenhouse gas emissions, costs for controlling or avoiding their emissions, and costs of sequestering emissions that do occur, the three major sources for developing estimates of economic benefits from reducing emissions of greenhouse gases."<sup>27</sup> In other words, the parties disagreed on whether calculating the cost of reducing CO<sub>2</sub> emissions was necessary and reliable.

The Ninth Circuit held that the National Highway Traffic Safety Administration's reasoning was arbitrary and capricious.<sup>28</sup> The Court conceded that the value of carbon emissions reduction may be difficult to ascertain because the value may have a wide range of values.<sup>29</sup> However, the Court concluded that the value of carbon emissions reduction is "certainly not zero."<sup>30</sup> The Ninth Circuit agreed with the petitioners that the scientifically supported values of carbon emission reduction demonstrated that it is possible to monetize the benefit of reducing carbon emission.<sup>31</sup> The Ninth Circuit determined that the cost of carbon emissions reduction can, and should, be calculated.

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

<sup>27</sup> *Id.* at 1192.

<sup>28</sup> *Id.* at 1199.

<sup>29</sup> *Id.* at 1200.

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

<sup>31</sup> *Id.* The court noted that the range of values does not begin at \$0 so there must be some calculable value. *Id.*

*B. 2010 Technical Support Document*

The Obama administration established the SCC.<sup>32</sup> The administration published the Technical Support Document (“Support Document”) which provides an overview of the SCC.<sup>33</sup> The Support Document states that the purpose of the SCC is to “allow agencies to incorporate the social benefits of reducing [CO<sub>2</sub>] emissions into a cost-benefit analysis of regulatory actions that have small, or marginal, impacts on cumulative global emissions.”<sup>34</sup> However, the Support Document concedes that uncertainties and model differences result in a range of SCC estimates.<sup>35</sup>

The Support Document defines the SCC as “an estimate of the monetized damages associated with an incremental increase in carbon emissions in a given year.”<sup>36</sup> The SCC is intended to account for the changes in net agriculture productivity, human health, property damages from increased flood risk, and the value of ecosystem services due to climate change.<sup>37</sup> However, the SCC is still considered to be provisional.<sup>38</sup> The Support Document includes recognition that a number of key uncertainties remain regarding the current SCC estimates; however, these estimates are predicted to evolve with improved understanding of the scientific and economic factors involved in determining the SCC.<sup>39</sup> The United States government

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<sup>32</sup> Cass R. Sunstein, *A Court Ruling That Could Save the Planet*, BLOOMBERG (Aug. 12, 2016), <https://www.bloomberg.com/view/articles/2016-08-12/a-court-ruling-that-could-save-the-planet>.

<sup>33</sup> Interagency Working Grp. on Soc. Cost of Carbon, U.S. GOV'T, TECHNICAL SUPPORT DOCUMENT: SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866, at 1 (August 2016), [https://www.epa.gov/sites/production/files/2016-12/documents/sc\\_co2\\_tsd\\_august\\_2016.pdf](https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf). [hereinafter 2010 Support Document].

<sup>34</sup> *Id.*

<sup>35</sup> *Id.*

<sup>36</sup> *Id.*

<sup>37</sup> *Id.* at 2.

<sup>38</sup> *Id.* at 4.

<sup>39</sup> *Id.*

must periodically review and reconsider estimates of the SCC used for cost-benefit analyses to ensure the SCC value is accurate based on scientific development.<sup>40</sup>

There are three integrated assessment models (IAMs) used to estimate the SCC,<sup>41</sup> which combine “climate processes, economic growth, and feedbacks between the climate and the global economy into a single modeling framework.”<sup>42</sup> Some may view use of global factors in determining the SCC as controversial. However, any international concerns are moot because the SCC does not give extraterritorial effect to a federal law and “hence does not intrude on such interests,” meaning the SCC does not impose any costs or regulations on foreign sovereigns.<sup>43</sup> Additionally, the SCC considers many other additional factors such as: the valuing of non-CO2 emissions, equilibrium climate sensitivity, socio-economic and emissions trajectories, and discount rates.<sup>44</sup>

### C. Calculating the SCC

IAMs are used to establish the SCC estimates that are used in rule making.<sup>45</sup> The three models that are used to compute the SCC were academically developed and are widely used in estimating future climate harms.<sup>46</sup> These models allow a user to enter a set of economic

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<sup>40</sup> *Id.*

<sup>41</sup> *Id.* at 5. The three models used to formulate the SCC are: DICE (Dynamic Model of Integrated Climate and the Economy), PAGE (Policy Analysis of the Greenhouse Effect), and FUND (Climate Framework for Uncertainty, Negotiation, and Distribution).

<sup>42</sup> *Id.*

<sup>43</sup> *Id.* at 10 (referencing to the fact that the United States cannot enact federal statutes that have an extraterritorial effect to ensure that U.S. laws respect the interests of foreign sovereigns).

<sup>44</sup> *See id.* at 13–23.

<sup>45</sup> Johnston, *supra* note 2, at 36.

<sup>46</sup> Jonathan Masur & Eric Posner, *Climate Regulation and the Limits of Cost-Benefit Analysis*, 99 CAL. L. REV. 1557, 1577 (2011).



parameters<sup>47</sup> which includes projections about future greenhouse gas emissions.<sup>48</sup> The models use the projected emissions to predict changes in the concentration of greenhouse gases in the atmosphere.<sup>49</sup> The changes in greenhouse gases are used to predict changes in the temperature, which in turn allow the models to project economic harms from the expected temperature increases.<sup>50</sup>

The Interagency Work Group (IWG), which was formed to create the SCC<sup>51</sup>, ran these three models and used standard baseline projections of economic growth and technological development to determine the predicted effects that warming has on the nation's gross domestic product.<sup>52</sup> The IWG obtained the mean outcome for each model and averaged the three results together which resulted in the baseline average reduction in gross domestic product.<sup>53</sup> The IWG re-ran the models, but did so with one additional ton of carbon emissions to determine the marginal effect on global gross domestic product of the additional unit of carbon.<sup>54</sup> The result of the equation was then subtracted from the baseline which resulted in the SCC.<sup>55</sup> For an agency to calculate the benefits of carbon reduction in federal regulations, it would multiply the emissions avoided by the price of a ton of emissions for the appropriate year.<sup>56</sup>

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<sup>47</sup> *Id.* at 1578. The economic parameters include preexisting baseline projections of economic growth and technological improvement. *Id.*

<sup>48</sup> *Id.*

<sup>49</sup> *Id.*

<sup>50</sup> *Id.*

<sup>51</sup> 2010 Support Document, *supra* note 33, at 2.

<sup>52</sup> Masur, *supra* note 47, at 1578.

<sup>53</sup> *Id.*

<sup>54</sup> *Id.*

<sup>55</sup> *Id.* at 1579 (“[T]he social cost of carbon: the amount of money saved for every marginal ton of carbon that is not emitted.”).

<sup>56</sup> *Id.*

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## BACKGROUND

The creation of the SCC arose from the need to calculate the cost of CO<sub>2</sub> reduction to have a proper CBA.<sup>57</sup> However, agencies cannot simply create the SCC and apply without statutory authority.

### *A. Administrative Procedure Act*

A court must look to the Administrative Procedure Act (APA) when deciding relevant questions of law and determining the meaning or applicability of the terms of an agency action.<sup>58</sup> The reviewing court must hold unlawful and set aside any agency action, findings, and conclusions that are found to be (a) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law; (b) contrary to constitutional right, power, privilege, or immunity; (c) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right; (d) without observance of procedure required by law; and (e) unsupported by substantial evidence.<sup>59</sup> Courts determine whether an agency's decision is arbitrary or capricious by inquiring whether the agency "has relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that is counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise."<sup>60</sup> Agencies must follow the APA when implementing new regulations.

### *B. Chevron Doctrine*

*"The power of an administrative agency to administer a congressionally created...program necessarily requires the*

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<sup>57</sup> *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1181 (9th Cir. 2008).

<sup>58</sup> 5 U.S.C.A. § 706 (West, Westlaw through Pub. L. No. 114-224).

<sup>59</sup> *Id.*

<sup>60</sup> *Zero Zone, Inc. v. U.S. Dep't of Energy*, 832 F.3d 654, 668 (7th Cir. 2016).

*formulation of policy and the making of rules to fill any gap left, implicitly or explicitly, by Congress.*<sup>61</sup>

Congress cannot account for every possible gap in the formulation of a policy or the making of a rule. Congress may explicitly delegate for an agency to clarify or fill any provisional gaps.<sup>62</sup> Congress may also implicitly delegate authority to an agency.<sup>63</sup> The Chevron Doctrine, announced in *Chevron U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, refers to a defense by a governmental agency which allows the court to show deference to the agency's interpretation of a law it administers.<sup>64</sup> The court must perform a two-part test when reviewing an agency's construction of a statute.<sup>65</sup> The first step is to determine whether Congress has spoken directly regarding the precise question at issue.<sup>66</sup> The court and agency must adhere to the express intent of Congress if the intent is unambiguous and clear.<sup>67</sup> However, if a court determines that Congress did not directly address the precise question at issue, the court will then examine whether the agency's answer is based on a permissible construction of the statute.<sup>68</sup> The court should not impose its own construction on the statute if an agency has already done so.<sup>69</sup> An agency's regulations are given controlling weight unless the regulations are arbitrary, capricious, or manifestly contrary to the statute.<sup>70</sup> Courts have generally held that there should be considerable

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<sup>61</sup> *Morton v. Ruiz*, 415 U.S. 199, 231 (1974).

<sup>62</sup> *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 843 (1984).

<sup>63</sup> *Id.* at 844.

<sup>64</sup> *Id.* at 842.

<sup>65</sup> *Id.*

<sup>66</sup> *Id.* at 842–43.

<sup>67</sup> *Id.*

<sup>68</sup> *Id.* at 843.

<sup>69</sup> *Id.*

<sup>70</sup> *Id.* at 844.

weight attributed to an executive department's construction of a statutory scheme.<sup>71</sup>

### C. EPCA and Regulating CRE's

Congress has been active in pursuing the protection of the environment. The Energy Policy and Conservation Act (EPCA) authorizes the DOE to impose mandatory energy conservation standards.<sup>72</sup> The EPCA creates certain parameters that the DOE must abide by to properly establish energy conservation standards that will satisfy statutory requirements.<sup>73</sup> One primary purpose of the EPCA is to improve the energy efficiency of equipment and appliances.<sup>74</sup> The EPCA directs the DOE to review energy conservation standards and to implement new ones when it is appropriate.<sup>75</sup>

Congress has established a framework that the DOE must follow when establishing new energy conservation standards.<sup>76</sup> First, the DOE may not impose standards that increase the maximum allowable energy use of any individual unit.<sup>77</sup> Second, the standards must be designed to achieve the “maximum improvement in energy efficiency”, and the standards must be “technologically feasible and economically justified.”<sup>78</sup> The EPCA also requires that the DOE establish testing procedures that will measure the energy use of any covered equipment.<sup>79</sup> The result of these measures will require the DOE to conduct a cost-benefit analysis that will measure the burden placed on manufacturers versus the benefit gained by the public by

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

<sup>72</sup> 42 U.S.C.A. § 6295(a) (West, Westlaw through Pub. L. No. 114-244).

<sup>73</sup> *Id.*

<sup>74</sup> *Id.*

<sup>75</sup> *Id.*

<sup>76</sup> *Zero Zone, Inc. v. U.S. Dep't of Energy*, 832 F.3d 654, 663 (7th Cir. 2016)

<sup>77</sup> 42 U.S.C.A. § 6295(o)(1).

<sup>78</sup> *Id.* § 6295(o)(2).

<sup>79</sup> *Zero Zone, Inc.*, 832 F.3d at 663.

reducing carbon. Congress amended the EPCA in 2005 to specifically include CRE's in the industrial equipment category.<sup>80</sup>

The Energy Policy Act of 2005 created standards for different classes of CRE.<sup>81</sup> The act also called for the DOE to set standards for any additional classes of CRE that the EPCA did not address.<sup>82</sup> Thus, congress gave the DOE clear instructions to prescribe standards regarding CRE. In 2009, the DOE added 39 more CRE classes that were defined by a combination of the equipment's geometry, door type, condensing-unit configuration, and its operating temperature.<sup>83</sup> Congress further amended CRE requirement under the American Energy Manufacturing Technical Corrections Act. The act implemented specific standards for self-contained commercial refrigerators with transparent doors.<sup>84</sup> The DOE must set standards for CRE that Congress does not explicitly set a standard for, and that require regulation to conserve energy.

#### *D. Executive Order 12866*

Executive order 12866 was issued by President Clinton in 1993.<sup>85</sup> The order requires agencies to design regulations in the most cost-effective manner to achieve the regulatory objective.<sup>86</sup> In doing so, each agency must access both the costs and the benefits of the intended regulation.<sup>87</sup> The order recognizes that some of these costs and benefits may be difficult to quantify.<sup>88</sup> Each agency should

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<sup>80</sup> *Id.*

<sup>81</sup> *Id.*

<sup>82</sup> *Id.*

<sup>83</sup> *Id.*

<sup>84</sup> *Id.* at 663–64.

<sup>85</sup> Summary of Executive Order 12866, ENV. PROTECTION AGENCY, <https://www.epa.gov/laws-regulations/summary-executive-order-12866-regulatory-planning-and-review> (last visited Dec. 1, 2016).

<sup>86</sup> Exec. Order No. 12866, 58 Fed.Reg. 51,735 (1993).

<sup>87</sup> *Id.*

<sup>88</sup> *Id.*

propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs.<sup>89</sup>

*E. Colorado District Court Requires Agency to Use SCC*

In July 2013, environmental organizations sought judicial review of three agency decisions by the Bureau of Land Management that, when taken together, authorized on-the-ground mining exploration activities in a part of the North Fork Valley, located in western Colorado.<sup>90</sup> Plaintiffs alleged that the agency decisions failed to comply with the National Environmental Policy Act (NEPA) and the APA.<sup>91</sup> The agency provided “an adequate disclosure of effects on adjacent lands.”<sup>92</sup> However, the issue stemmed from the agency’s treatment of the costs associated with greenhouse gas emissions, which the court held to be arbitrary and capricious.<sup>93</sup> The agency failed to evaluate all of the effects of a proposed action which includes analyzing direct, indirect, and cumulative effects as is required to be done under NEPA.<sup>94</sup>

The agency quantified the amount of emissions relative to state and national emissions; however the agency failed to quantify the impacts on global climate change.<sup>95</sup> Instead, the agency simply provided an explanation as to why the analysis would be impossible.<sup>96</sup> The United States District Court for the District of Colorado rejected the argument because such a tool was available.<sup>97</sup> The SCC was designed to quantify a project’s contribution to costs associated with

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<sup>89</sup> *Id.*

<sup>90</sup> *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1181 (D. Colo. 2014).

<sup>91</sup> *Id.*

<sup>92</sup> *Id.* at 1189.

<sup>93</sup> *Id.*

<sup>94</sup> *Id.* at 1190.

<sup>95</sup> *Id.*

<sup>96</sup> *Id.*

<sup>97</sup> *Id.*

global climate change.<sup>98</sup> The court provided further support for the validity of the SCC by referencing the Environmental Protection Agency's support and use of it.<sup>99</sup> Plaintiff's petition for review of the agency action was granted and sustained, and the court immediately enjoined the defendants from proceeding in any manner that included construction.<sup>100</sup> The court reasoned that the environmental impact statement contained a factually inaccurate justification by omitting the SCC.<sup>101</sup> However, the court noted that agencies do not always have to use the SCC as they may have a justifiable reason for not doing so.<sup>102</sup>

*F. D.C. Circuit Upholds Agency's Decision to Ignore SCC*

Several environmental organizations petitioned to the Court of Appeals for the District of Columbia for review of the Federal Energy Regulatory Commission's (FERC) "conditional authorization of the Cove Point liquefied natural gas facility from an import maritime terminal to a mixed-use, import and export terminal."<sup>103</sup> Petitioners argued that FERC failed to consider several possible environmental impacts that the Cove Point conversion project may have.<sup>104</sup> In particular, petitioners challenged FERC's failure to use an SCC analysis or a similar analytical tool to analyze the environmental impacts of greenhouse gas emissions from the construction, operation, and conversion of the Cove Point facilities.<sup>105</sup> The court denied the petitioners relief and held that FERC was not required to consider climate impacts under NEPA.

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

<sup>99</sup> *Id.*

<sup>100</sup> *Id.* at 1201.

<sup>101</sup> *Id.*

<sup>102</sup> *Id.* at 1193.

<sup>103</sup> *EarthReports, Inc. v. Fed. Energy Regulatory Comm'n*, 828 F.3d 949, 951 (D.C. Cir. 2016).

<sup>104</sup> *Id.* at 951–52.

<sup>105</sup> *Id.* at 956.

NEPA requires federal agencies to “include an environmental impact statement in every recommendation or report on proposals for... major Federal actions significantly affecting the quality of the human environment...”<sup>106</sup> Agencies whose procedures do not require preparation of an environmental impact statement must first prepare an environmental assessment.<sup>107</sup> An environmental assessment briefly provides sufficient evidence and analysis for determining whether to prepare an environmental impact statement.<sup>108</sup>

FERC acknowledged the availability of the SCC but concluded that, “it would not be appropriate or informative to use for this project.”<sup>109</sup> The agency provided three reasons: (1) the lack of consensus on the appropriate discount rate leads to significant variation in output, (2) the tool does not measure the actual incremental impacts of a project on the environment, and (3) there are no established criteria identifying the monetized values that are to be considered significant for NEPA purposes.<sup>110</sup> Petitioners disagreed with FERC’s assessment, but the court dismissed their argument stating that the petitioners failed to identify another method other than using the SCC that FERC could have used to determine how the “project’s incremental contribution to [greenhouse gas emissions] would result in physical effects on the environment, either locally or globally.”<sup>111</sup> The court determined that the petitioners failed to provide a reason to doubt the reasonableness of FERC’s conclusion that applying the SCC was not appropriate.<sup>112</sup>

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<sup>106</sup> *Id.* at 953.

<sup>107</sup> *Id.*

<sup>108</sup> *Id.*

<sup>109</sup> *Id.* at 956.

<sup>110</sup> *Id.*

<sup>111</sup> *Id.*

<sup>112</sup> *Id.*



## ZERO ZONE, INC. v. UNITED STATES DEPARTMENT OF ENERGY

In *Zero Zone*, Petitioners challenged the substance of the rules set forth by the DOE regarding CREs and the decision-making process.<sup>113</sup> *Zero Zone, Inc.* is a small business that specializes in CREs.<sup>114</sup> The Air-Conditioning, Heating and Refrigeration Institute is a trade association of CRE manufacturers. Both parties petitioned for review of the New Standards and the 2014 Test Procedure Rule (“Test Procedure”).<sup>115</sup> The motion was granted by the Seventh Circuit for review.<sup>116</sup> The Seventh Circuit determined that the DOE acted in a manner that was worthy of court deference.<sup>117</sup> The New Standards Rule was premised on analytical models that were considered to have substantial evidence in support of it.<sup>118</sup> As a result, the New Standards Rule was not arbitrary nor capricious.<sup>119</sup> This section reviews the facts of *Zero Zone* and the Seventh Circuit’s reasoning for their holding.

A. *The New Standards Rule*

In 2010, the DOE began the process of revising CRE energy efficiency standards. The agency published a sixty-page framework and a notice regarding the proposal of new CRE energy efficiency

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<sup>113</sup> *Zero Zone, Inc. v. U.S. Dep’t of Energy*, 832 F.3d 654, 660 (7th Cir. 2016). The EPCA grants the Seventh Circuit jurisdiction to hear the case. *Zero Zone* was petitioned directly to the Seventh Circuit. 42 U.S.C.A. 6311(9)(A) (West, Westlaw through Pub. L. No. 114-224) (“Any person who will be adversely affected by a rule prescribed under section 6293, 6294, or 6295 of this title may, at any time within 60 days after the date on which such rule is prescribed, file a petition with the United States court of appeals for the circuit in which such person resides or has his principal place of business, for judicial review of such rule.”).

<sup>114</sup> *Zero Zone, Inc.*, 832 F.3d at 661.

<sup>115</sup> *Id.*

<sup>116</sup> *Id.*

<sup>117</sup> *Id.*

<sup>118</sup> *Id.*

<sup>119</sup> *Id.*

standards.<sup>120</sup> Additionally, the DOE published a technical support document for the proposed rule, and also held a public meeting to solicit feedback and provide preliminary responses regarding the proposed rules.<sup>121</sup>

The proposal listed new standards for forty-nine classes of CRE. The classes were defined by a combination of the equipment's geometry, door type, condensing-unit configuration, and operating temperature.<sup>122</sup> The proposed rule established the maximum daily energy consumption for each class of CRE which would be determined by either the unit's refrigerated volume or by the unit's total display area (TDA).<sup>123</sup> The DOE set forth higher standards for energy consumption that applied to forty-one equipment classes which they determined were both technologically feasible and economically justified.<sup>124</sup>

The DOE determined the appropriate standard for each class by using a design-option engineering analysis.<sup>125</sup> Here, the DOE chose to use a representative unit from each class of CRE.<sup>126</sup> Then, the DOE calculated how much it would cost manufacturers to implement more efficient components into their CRE units.<sup>127</sup> The DOE also calculated the daily energy consumption that would result from manufactures implementing the more efficient components.<sup>128</sup> The DOE used these calculations to determine what would be a feasible maximum energy

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<sup>120</sup> *Id.* at 667. The notice of proposed rulemaking for the New Standards Rule was issued on September 11, 2013. *Id.* at 667 n. 9.

<sup>121</sup> *Id.* at 667.

<sup>122</sup> *Id.*

<sup>123</sup> *Id.*

<sup>124</sup> *Id.* The DOE did not make any changes regarding eight equipment classes and the standards for aforementioned classes remained consistent with the 2009 Final Rule. *Id.*

<sup>125</sup> *Id.*

<sup>126</sup> *Id.* The DOE chose a unit that was toward the larger end of that class. *Id.*

<sup>127</sup> *Id.*

<sup>128</sup> *Id.*

consumption level for a unit of that size.<sup>129</sup> The calculation served as a launching point for the DOE, which it used to establish an equation to determine a CRE unit's maximum energy consumption level.<sup>130</sup> This standard was meant to be used in the 2009 Final Rule; however, the DOE received negative feedback regarding the effect their equation would have on smaller units.<sup>131</sup> Thus, the DOE decided to allow manufacturers to use any design path that was most convenient for them.<sup>132</sup>

The DOE, in order to satisfy statutory requirements, considered whether the New Standards were economically justified.<sup>133</sup> To do so, the agency created five potential trial standard levels of energy efficiency that would be required by each class.<sup>134</sup> It then conducted a cost-benefit analysis for each level, and concluded that the third-highest level would offer the maximum improvement in efficiency that is technologically feasible and economically justified while still resulting in significant energy conservation.<sup>135</sup> Per requirement, the DOE requested a letter from the United States Department of Justice wherein the department determined the New Standards would not have an anticompetitive effect.<sup>136</sup>

The DOE officially put the New Standards into effect after it concluded that the benefits outweighed the costs per the statutorily imposed economic justification requirement.<sup>137</sup>

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<sup>129</sup> *Id.* The DOE ranked the components in order of cost and drew a cost-efficiency curve to determine what would be feasible. *Id.*

<sup>130</sup> *Id.* at 665.

<sup>131</sup> *Id.* The DOE considered the comments and established an "offset" factor for each class. This allowed smaller equipment to consume more energy. *Id.*

<sup>132</sup> *Id.* This allowed manufacturers to retain features they found valuable while still manufacturing equipment that fell within the New Standard. *Id.*

<sup>133</sup> *Id.*

<sup>134</sup> *Id.*

<sup>135</sup> *Id.*

<sup>136</sup> *Id.* at 666.

<sup>137</sup> *Id.* (Development of new CRE would cost manufacturers between \$93.9 and \$165 million. The benefit to consumers would be between \$4.93 and \$11.74 billion).

### *B. The 2014 Test Procedure Rule*

The New Standards requires a test procedure to be used in conjunction with the standards.<sup>138</sup> The Test Procedure includes a method on how to calculate the TDA of CRE.<sup>139</sup> The equation requires certain measurements of the unit to be entered into a general equation.<sup>140</sup> One measurement is the “Length of Commercial Refrigerated Display Merchandiser” (LCR). The DOE’s New Standards make the LCR directly proportional to a CRE unit’s maximum energy consumption level.<sup>141</sup>

The DOE published the proposed method to solicit comments.<sup>142</sup> The LCR included the total length of the transparent area on CRE, but it did not include any opaque or non-transparent areas.<sup>143</sup> This irked several manufacturers who submitted comments opposing the definition of the LCR arguing that it went against the common industry standard.<sup>144</sup> The DOE took these comments into account and revised their testing procedure rule to include the industry standard.<sup>145</sup>

### *C. The Seventh Circuit’s Holding*

The Seventh Circuit considered the challenges to: (1) the DOE’s engineering analysis; (2) the DOE’s economic analysis; (3) the DOE’s regulatory flexibility analysis regarding the effect the New Standards may have on small businesses; (4) the DOE’s assessment of the cumulative regulatory burden; and (5) the 2014 Test Procedure Rule.

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<sup>138</sup> *Id.*

<sup>139</sup> *Id.*

<sup>140</sup> *Id.*

<sup>141</sup> *Id.* The longer the display on a CRE unit, the more energy a CRE unit is allowed to consume on a daily basis. *Id.*

<sup>142</sup> *Id.*

<sup>143</sup> *Id.*

<sup>144</sup> *Id.* The common industry standard measured the LCR by measuring the CRE unit’s inside wall to inside wall, which would “disregard the presence of non-transparent mullions and door frames. *Id.*

<sup>145</sup> *Id.*

## 1. Engineering Analysis

The Petitioners challenged the DOE's engineering analysis arguing that the DOE did not provide an opportunity for comments regarding the DOE's engineering spreadsheet.<sup>146</sup> The Seventh Circuit rejected this argument because the DOE did provide two technical support documents that presented all of the necessary data regarding the New Standards.<sup>147</sup> The court held that the data not being organized into a spreadsheet was irrelevant because all of the underlying data contained in the spreadsheet was present in the technical support documents.<sup>148</sup>

Petitioners also challenged the technologically feasible energy consumption level for each class.<sup>149</sup> The challenge addressed the DOE's modeling of compressors.<sup>150</sup> The DOE concluded that a high efficiency single speed hermetic compressor would be ten percent more efficient than the standard level compressor.<sup>151</sup> This was challenged by several manufacturers who were able to persuade the DOE that the figure was inaccurate.<sup>152</sup> The DOE then applied an estimate presented by a single manufacturer and settled on the efficiency being two percent.<sup>153</sup> Petitioners argued this figure was too inaccurate to rely on the estimate by a single manufacturer.<sup>154</sup> However, the Seventh Circuit dismissed the Petitioners contention stating that the chosen figure is supported by substantial evidence and was reached through a reasoned decision making process.<sup>155</sup> Further, the Seventh Circuit stated they have a limited role because courts only

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<sup>146</sup> *Id.* at 670.

<sup>147</sup> *Id.*

<sup>148</sup> *Id.*

<sup>149</sup> *Id.* at 671.

<sup>150</sup> *Id.*

<sup>151</sup> *Id.*

<sup>152</sup> *Id.*

<sup>153</sup> *Id.* at 672.

<sup>154</sup> *Id.*

<sup>155</sup> *Id.*

require that an agency acknowledge factual uncertainties and identify the considerations it found persuasive in making its decision.<sup>156</sup>

Another challenge by Petitioners focused on the insulation foam thickness. Petitioners questioned the validity of the New Standards by arguing that the DOE acted arbitrarily and capriciously when it modeled the insulation component.<sup>157</sup> The Petitioners pointed out that the recommended increase in insulation foam thickness would not be possible for certain refrigerators and freezers because of limited floor space.<sup>158</sup> The Seventh Circuit once again dismissed Petitioner's contention stating that the DOE provides manufacturers with the choice to use alternative methods if redesigning the insulation is not an available design option.<sup>159</sup> The Seventh Circuit held that this cannot be arbitrary or capricious because it was based on *substantial* evidence.<sup>160</sup>

## 2. Economic Analysis

The EPCA requires that efficiency standards be economically justified.<sup>161</sup> Petitioners argued that the economic standards were unjustified.<sup>162</sup> First, the Petitioners argued that the DOE acted arbitrarily and capriciously when it assumed that the new CRE standards would not result in "significant changes" in purchasing behavior.<sup>163</sup> The DOE treated CRE to be price inelastic.<sup>164</sup> The DOE admitted to having inadequate information regarding CRE customer behavior.<sup>165</sup> The DOE therefore made a prediction about the CRE

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<sup>156</sup> *Id.*

<sup>157</sup> *Id.* at 673.

<sup>158</sup> *Id.*

<sup>159</sup> *Id.* at 673–74.

<sup>160</sup> *Id.* at 674.

<sup>161</sup> 42 U.S.C. § 6295(o)(2)(A) (West, Westlaw through Pub. L. No. 114-224).

<sup>162</sup> *Id.*

<sup>163</sup> *Zero Zone, Inc.*, 832 F.3d at 675.

<sup>164</sup> *Id.* Price inelasticity is when an increase in price does not impact the amount being purchased. *Id.*

<sup>165</sup> *Id.*

market, which the Seventh Circuit held was not arbitrary or capricious.<sup>166</sup> The DOE's prediction regarding market elasticity was that businesses would continue to purchase CRE regardless of the price because it would be necessary for them to comply with health code regulations.<sup>167</sup> Businesses must store their food at proper temperatures to comply with health code regulations, which is an example as to why the purchase of CRE would continue.<sup>168</sup> The DOE's argument is helped by the fact that there is a lack of alternatives to CRE.

Second, Petitioners challenged the use of SCC in the DOE's environmental benefits analysis. The Petitioners argue that the EPCA does not allow for the consideration of environmental factors.<sup>169</sup> Additionally, the Petitioners claimed the DOE's analysis of the SCC was arbitrary and capricious.<sup>170</sup> The Seventh Circuit determined that Congress did intend for the DOE to have the ability to consider the reduction in SCC.<sup>171</sup> The Seventh Circuit reasoned it was reasonable to conclude that the EPCA "requires the DOE to consider the need for national energy...conservation"; the Court went on to say that it is appropriate to measure the expected reduction in environmental costs in a cost-benefit analysis.<sup>172</sup> The Petitioners also challenge the use of the SCC arguing that: "(1) who exactly worked on the SCC analysis had not been made public; (2) the inputs to the models were not peer reviewed; and (3) the damages functions, or variables based on problems like sea level rise, were determined in an arbitrary manner."<sup>173</sup> The DOE admitted that the SCC has limitations.<sup>174</sup> The DOE cited to multiple parties that referenced the SCC values such as a

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<sup>166</sup> *Id.* at 676.

<sup>167</sup> *Id.*

<sup>168</sup> *Id.*

<sup>169</sup> *Id.*

<sup>170</sup> *Id.* at 677.

<sup>171</sup> *Id.*

<sup>172</sup> *Id.*

<sup>173</sup> *Id.* at 678.

<sup>174</sup> *Id.*

2010 interagency group report and the Office of Management and Budget's Final Information Quality Bulletin for Peer Review.<sup>175</sup>

Petitioners argued that the DOE erroneously considered the global benefits to the environment while only considering the national costs.<sup>176</sup> The EPCA only concerns national energy and water conservation.<sup>177</sup> The DOE responded by noting that climate change policies effect the entire world.<sup>178</sup> The Petitioners argument regarding the lack of consideration for global costs fell short because they do not provide any estimation or example of global costs.<sup>179</sup>

Lastly, Petitioners challenged the anticompetitive effects the New Standards would have. Petitioners argue that the DOJ's letter was not adequate in its reasoning, and that the submission and publication of the DOJ letter were untimely.<sup>180</sup> The Seventh Circuit dismissed both arguments. First, the Seventh Circuit held that the EPCA places the burden on the DOJ to provide adequate reasoning, not the DOE regarding anti-competitive measures.<sup>181</sup>

#### THE SCC SHOULD BE USED IN ENVIRONMENTAL AND ENERGY REGULATORY COST-BENEFIT ANALYSES

The Seventh Circuit denied the Petitioners' challenge to the DOE's New Standards and Test Procedure. More importantly, the Seventh Circuit upheld the use of the SCC, holding that the use of the SCC in a cost-benefit analysis is not arbitrary or capricious. This section will present the drawbacks of the SCC. Also, it will discuss

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<sup>175</sup> *Id.*  
<sup>176</sup> *Id.*  
<sup>177</sup> 42 U.S.C.A. § 6295(o)(2)(B)(i)(VI) (West, Westlaw through Pub. L. No. 114-244).  
<sup>178</sup> *Zero Zone, Inc.*, 832 F.3d at 679.  
<sup>179</sup> *Id.*  
<sup>180</sup> *Id.* at 680.  
<sup>181</sup> *Id.* at 681–82. The DOE has a “secondary role under the [anti-competitive] provision of the EPCA.” *Id.*



why the Seventh Circuit was correct in its holding that the SCC is not arbitrary or capricious.

A. *The SCC is Not Perfect*

The SCC is a useful tool for agencies when creating regulations.<sup>182</sup> It allows the agency to factor in CO2 costs, which previously agencies were unable to do. However, the SCC is not perfect.

The SCC has been referred to as a “black box” by one member of Congress.<sup>183</sup> The concern regarding the use of the SCC is that it will continue to be used in a variety of economically significant rules despite the fact that the settled upon figure is highly controversial among experts.<sup>184</sup> Also, the amount of benefit the SCC may add to a CBA makes it difficult for opponents of a regulation to rebuke the CBA. For example, the Environmental Protection Agency quantified that potential regulations, regarding tailpipe emissions, would result in a \$280 billion benefit while being outweighed by a \$350 billion cost.<sup>185</sup> The regulation would have failed, but for the addition of the SCC into the cost-benefit analysis which caused the proposed regulation to result in a net benefit of \$100 billion and making the benefit a total of \$380 billion.<sup>186</sup>

The SCC gives agencies a tool that can extrapolate the benefit, thereby allowing regulations in danger of failing a cost-benefit analysis to survive scrutiny. The SCC benefit may vary in different situations, but the SCC can account for over half of the benefit of a regulation. For example, the Environmental Protection Agency published emission guidelines regarding new and existing power

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<sup>182</sup> *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1190–91 (D. Colo. 2014).

<sup>183</sup> Jay G. Stirling, Note, *How to Deal with Hornets: The Administrative Procedure Act and the Social Cost of Carbon*, 100 IOWA L. REV. 854, 857 (2011).

<sup>184</sup> *See Id.* at 856.

<sup>185</sup> Johnston, *supra* note 2, at 36.

<sup>186</sup> *Id.*

plants; the SCC accounted for 40-65% of the projected benefits.<sup>187</sup> The application of the SCC can therefore have a great impact on CBA and allow more environmentally friendly regulations to pass.

The cost of carbon may be difficult to grasp due to its size, given the industrial-size dollar figures.<sup>188</sup> However, the figure is much easier to comprehend when applied to the average American. For example, the activities of a single American produces roughly eighteen tons of CO<sub>2</sub> per year.<sup>189</sup> It is estimated that a third of that comes from transportation.<sup>190</sup> If you multiply the 18 tons by the SCC, the amount comes to \$222, which represents how much the daily commute costs in societal damages each year.<sup>191</sup> This figure, however, may be much larger depending on your calculation of the SCC. For example, two Stanford researchers have estimated the SCC to cost \$220 per ton.<sup>192</sup> Using this figure, the average daily commute damages come out to be somewhere around \$1,320 each year.<sup>193</sup> This illustrates the wide range of results that may occur depending on which calculation of the SCC is used. Additionally, it creates a problem for the government when trying to calculate the SCC. If the government adopted the Stanford figure it would make it nearly impossible for businesses to challenge regulations successfully.<sup>194</sup>

Some experts argue that the SCC uses flawed, or inaccurate, estimates when being calculated. The SCC estimate is based on IAMs.<sup>195</sup> The main issue with the IAM is that the modeler has freedom in choosing the forms, values and inputs that are used to calculate the

<sup>187</sup> Stirling, *supra* note 157, at 856.

<sup>188</sup> Wihbey, *supra* note 1.

<sup>189</sup> *Id.*

<sup>190</sup> *Id.*

<sup>191</sup> *Id.*

<sup>192</sup> *Id.*

<sup>193</sup> *Id.* (This is about a \$1,100 difference per year).

<sup>194</sup> *See supra* notes 159-160. The SCC adds to the benefit in a cost-benefit analysis which may result in the benefit surpassing the burden).

<sup>195</sup> 2010 Support Document, *supra* note 33, at 3.

SCC.<sup>196</sup> The model uses six different elements.<sup>197</sup> Interestingly the application of this model resulted in two significantly outcomes. Two different publications, Nordhaus (2008) and Stern (2007), applied assumptions regarding discount rates, abatement costs, parameters affecting temperature change, and the function determining economic impact to determine what the SCC should be.<sup>198</sup> Nordhaus concluded that the SCC should be around or less than \$20 a ton while Stern concluded the SCC should be above \$200 a ton.<sup>199</sup> This glaring difference is a result of the assumptions that each person applied.<sup>200</sup> This demonstrates the consistency issue that is present in the SCC. The model depends on assumptions, which is what models do, but the assumptions vary so significantly that one model of the estimated cost of the SCC can be ten times larger than another model.<sup>201</sup>

Environmental and energy regulations attempt to reduce environmental harm by imposing stricter standards on businesses. Agencies who implement these regulations hope to provide a benefit to the public. However, these regulations force businesses to adapt to be in compliance. Compliance costs placed upon manufacturers because of the SCC will likely be transferred onto customers. For instance, the Obama administration estimates that a socially efficient carbon price would be \$36 per ton.<sup>202</sup> This tax will translate to \$0.36 per gallon at the gasoline pump.<sup>203</sup> This is a significant increase in gas prices that would affect all Americans.

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<sup>196</sup> Robert S. Pindyck, *Climate Change Policy: What Do the Models Tell Us?*, 51 J. ECON. LITERATURE 860, 863 (2013).

<sup>197</sup> *Id.*

<sup>198</sup> *Id.*

<sup>199</sup> *Id.*

<sup>200</sup> *Id.*

<sup>201</sup> *See id.*

<sup>202</sup> *Id.*

<sup>203</sup> *Id.*

*B. The SCC is a Beneficial Tool to Use in a Cost-Benefit Analysis*

The SCC may not be perfect, but it is a useful tool to use a cost-benefit analysis. Agencies should have the ability to utilize the SCC, and if they decide not to, provide a basis as to why they believe the use of it would be inappropriate. Carbon pricing may be the simplest and most transparent way for the public sector to address global warming.<sup>204</sup>

Despite concerns over the accuracy of the SCC, the IWG continues to study and improve the SCC. For example, in 2010 the IWG calculated the estimates of the SCC for 2020 CO<sub>2</sub> emissions as being \$7, \$26, or \$42 per ton emitted.<sup>205</sup> However, in 2013 the IWG recalculated the 2020 CO<sub>2</sub> emissions cost to \$12, \$42, or \$62 per ton respectively.<sup>206</sup> The SCC is still in its early stages and it will continue to improve and become more accurate as scientific and economic understanding improves.

The arguments against the inaccuracy and weight of the SCC may have merit, but thus far have been inconsequential. Researchers have examined the impact the addition of SCC has on regulations when applied to a cost-benefit analysis.<sup>207</sup> The results thus far have shown minimal impact.<sup>208</sup> According to a 2014 paper published by the Brookings Institution, the SCC has been involved in 53 regulatory policies.<sup>209</sup> The application of the SCC has resulted to be only 14 percent of net benefits, on average, being accounted for reducing carbon.<sup>210</sup> Further, the application of the SCC has tipped the scales of

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<sup>204</sup> Jess Gaspar & Bill Jarvis, *The Fiduciary Case for Carbon Exposure Management Now (Not Later)*, COMMONFUND INSIGHTS BLOG (Oct. 18, 2016), <https://www.commonfund.org/2016/10/18/post-carbon-exposure-management-now/>.

<sup>205</sup> Johnston, *supra* note 2, at 36.

<sup>206</sup> *Id.*

<sup>207</sup> Wihbey, *supra* note 1.

<sup>208</sup> *Id.*

<sup>209</sup> Robert W. Hahn & Robert A. Ritz, *Does the Social Cost of Carbon Matter? Evidence from US Policy*, 44 J. LEGAL STUD. 229, 235 (2015).

<sup>210</sup> *Id.* at 238.

a cost-benefit analysis in roughly only one out of every eight rule-making scenarios.<sup>211</sup>

Courts have started to face challenges to the SCC. The Ninth Circuit correctly articulated that agencies must factor in the SCC in cost-benefit analyses because failing to do so would mean the cost of CO2 emissions is \$0.<sup>212</sup> The cost of CO2 emissions is certainly not \$0 evidenced by the fact that there is wide acceptance of the fact that CO2 emissions harm our climate.<sup>213</sup> Harmful effects to the global climate must be resulting in some sort of cost to the population. The SCC gives agencies and the government an opportunity to measure these harmful effects while also giving them an opportunity to correct the harmful effects.

Without the SCC, agencies would not be able to quantify global environmental harms. The SCC is beneficial and useful as a tool because it mitigates CO2. For example, over the next forty years, three vehicle rulemakings are projected to result in a benefit ranging from \$78 billion to \$1.2 trillion.<sup>214</sup>

### *C. Courts Should Defer to Agencies Regarding SCC Use*

The use of the SCC is neither arbitrary nor capricious. Courts should use Chevron Doctrine when deciding cases regarding the use, or non-use, of the SCC. In *Zero Zone*, Petitioners argued that that the DOE acted arbitrarily and capriciously when enacting the New Standards Rule by including the SCC in its cost-benefit analysis. The Seventh Circuit correctly held that the DOE acted within its powers.

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<sup>211</sup> *Id.* at 244.

<sup>212</sup> *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1200 (9th Cir. 2008).

<sup>213</sup> Howard Shelanski & Maurice Obstfeld, *Estimating the Benefits from Carbon Dioxide Emissions Reductions*, THE WHITE HOUSE (Dec. 1, 2016), <https://www.whitehouse.gov/blog/2015/07/02/estimating-benefits-carbon-dioxide-emissions-reductions>.

<sup>214</sup> *The Social Cost of Carbon*, ENV. PROTECTION AGENCY, <https://www.epa.gov/climatechange/social-cost-carbon> (last visited Dec. 1, 2016).

The scope of review for the arbitrary and capricious standard is narrow.<sup>215</sup> Courts should not substitute its judgment automatically so as to agree with the agency.<sup>216</sup> Instead, the court must examine the relevant data and articulate a satisfactory explanation as to why the court believes there is a rational connection between the facts found and a choice made regarding the agency's action.<sup>217</sup>

The arbitrary and capricious standard fails if the agency relies on factors which Congress has not intended for the agency to consider.<sup>218</sup> It may also fail if the agency has "entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise."<sup>219</sup>

Agencies that factor the SCC are trying to consider every important factor in a CBA. This, however, does not mean that agencies *must* apply the SCC.<sup>220</sup> Agencies must consider the SCC to satisfy statutory requirements.<sup>221</sup> Agencies are mandated by the APA to pass regulations which are not arbitrary or capricious.<sup>222</sup> Furthermore, a regulation may be arbitrary or capricious if the agency fails to consider an important aspect of the problem, or if the agency fails to offer an explanation for its decision that is counter to the evidence before the agency.<sup>223</sup> Greenhouse gas emissions result in detrimental effects on a global scale. Agencies which fail to consider such effects are not considering an important aspect of a global environmental problem.

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<sup>215</sup> *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 103 S.Ct. 2856, 2866–67 (1983).

<sup>216</sup> *Id.*

<sup>217</sup> *Id.*

<sup>218</sup> *Id.*

<sup>219</sup> *Id.*

<sup>220</sup> *See High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1193 (D. Colo. 2014).

<sup>221</sup> 5 U.S.C.A. § 706 (West, Westlaw through Pub. L. No. 114-224).

<sup>222</sup> *Id.*

<sup>223</sup> *Id.*

Additionally, if an agency believes that the SCC would be an inappropriate factor in a cost-benefit analysis, the agency should provide a basis for its conclusion.<sup>224</sup> The *Chevron Doctrine* allows courts to defer to executive agencies in situations where Congress has not directly spoken to an issue.<sup>225</sup> Congress has yet to take action regarding the SCC, and therefore we must defer to agencies.

### CONCLUSION

The Seventh Circuit was the first federal court to uphold the use of the SCC in a cost-benefit analysis. It is unlikely that this will be the last court to rule on such an issue. The SCC is a controversial concept because of the politics involved. Generally, political liberals hope to preserve the environment and strive to implement ways to reduce global pollution. Political conservatives generally strive to reduce the burdens placed upon businesses. The SCC is likely to allow regulations to survive scrutiny. However, the SCC is not a tool that will allow agencies to pass any regulation they want. Instead, it is a tool that will allow agencies to factor in negative global effects on the environment.

Executive agencies should continue to develop the SCC. With time, the SCC and the scientific and economic estimates behind it will start to gain wide acceptance and, more importantly, consistency. Experts should be striving to continue development of the SCC so the potential per ton costs are not so wide ranging. Development of the SCC is important to developing a functional regulatory framework as well as to preserving the environment. The uncertainty regarding the use of the SCC in a CBA should be resolved by Congressional action.

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<sup>224</sup> See *High Country Conservation Advocates*, 52 F. Supp. 3d at 1193.

<sup>225</sup> *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 843 (1984).