



Institute for  
**Policy Integrity**

NEW YORK UNIVERSITY SCHOOL OF LAW

**June 21, 2022**

**To:** Environmental Protection Agency  
**Subject:** Comments on “Federal Implementation Plan Addressing Regional Ozone Transport for the 2015 Primary Ozone National Ambient Air Quality Standard,” 87 Fed. Reg. 20,036 (Apr. 6, 2022)  
**Docket ID:** EPA-HQ-OAR-2021-0668

The Institute for Policy Integrity at New York University School of Law (“Policy Integrity”)<sup>1</sup> respectfully submits the following comments to the Environmental Protection Agency (“EPA”) on its proposed Federal Implementation Plan Addressing Regional Ozone Transport for the 2015 Primary Ozone National Ambient Air Quality Standard.<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.

EPA’s Proposed Federal Implementation Plan (“Proposed FIP”) would implement a legally sound system to address interstate ozone pollution from both electric generating units (EGUs) and other sources (non-EGUs) and confer hundreds of billions of dollars of net societal benefits. We commend EPA for this important regulatory step and offer the following observations and recommendations:

- **The Proposed FIP’s expected benefits greatly outweigh its expected costs.** EPA estimates that, between 2023 and 2043, the monetized criteria pollutant-related benefits of the Proposed FIP will exceed its costs by \$220 billion. And that already massive sum does not account for numerous unquantified health and environmental benefits of criteria pollutant reduction or for \$670 million in annual climate co-benefits that will also result from the Proposed FIP.
- **EPA should clarify and consider modifying several aspects of its cost-benefit analysis and should more fully explain whether and how this analysis informed its regulatory choices.** In particular, EPA should clarify its reasons for choosing the analytical timeframes it used in its cost-benefit analysis, give the greatest weight to the analysis that uses a 20-year timeframe, and evaluate whether a longer timeframe may result in a more accurate assessment of costs and benefits. In addition, EPA should clarify the approach it took to discounting, and potentially give greater weight to calculations that use a 3% social discount rate rather than a 7% social discount rate.

---

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

<sup>2</sup> 87 Fed. Reg. 20,036 (Apr. 6, 2022) (Docket ID EPA-HQ-OAR-2021-0668).

- **EPA should also either select the regulatory alternative that would yield the greatest benefits or provide a compelling reason not to do so.** Based on EPA’s analysis, the more stringent alternative would generate \$10 billion in additional benefits with a 3% discount rate over a 20-year period. EPA should explain why it proposes to leave additional net benefits on the table.
- **EPA should revise and expand its distributional analysis to better reflect the impacts of the Proposed FIP on vulnerable subpopulations.** In particular, EPA should incorporate distributional outcomes for populations near affected sources, conduct a more geographically granular analysis, and treat distributional effects as an unquantified benefit when evaluating the overall costs and benefits of different regulatory alternatives.
- **The Proposed FIP’s extension of Good Neighbor obligations to non-EGU sources is consistent with statutory text, regulatory precedent, and caselaw.** The broad statutory text of the Good Neighbor Provision, EPA’s long history of interpreting the provision to include non-EGUs, and judicial statements on review of Good Neighbor rules all support EPA’s authority to regulate non-EGU emission sources.
- **EPA should further explain how it decided which non-EGUs to include in the Proposed FIP.** Specifically, EPA should provide more detail on its decision to consider regulation of non-EGU sources only if they emitted more than 100 tons per year of NO<sub>x</sub>. EPA should also consider expanding the FIP to cover additional Tier 2 emissions units.
- **While the Proposed FIP is an important regulatory step, it will not achieve attainment in all downwind states.** Additional regulatory measures will thus be needed to fully address ozone nonattainment in several of the covered states.

## **I. The Proposed FIP's Benefits Greatly Outweigh Its Costs.**

The cost-benefit analysis for the Proposed FIP shows that monetized criteria pollutant-related benefits alone outweigh costs by \$220 billion over a 20-year period.<sup>3</sup> And, as EPA notes, reductions in criteria pollutants that result from the Proposed FIP will also lead to numerous and significant unquantified benefits. For instance, the Proposed FIP will avoid respiratory issues triggered by NO<sub>2</sub> and SO<sub>2</sub> exposure, and avert hospitalizations for asthma and chronic lung disease due to NO<sub>2</sub> exposure; reduce the effects of ozone on sensitive ecosystems; improve visibility; and potentially improve water quality.<sup>4</sup> In addition, due to reductions in CO<sub>2</sub> emissions that are expected to result from steps taken to meet the Proposed FIP's NO<sub>x</sub> limits, the Proposed FIP will also generate at least approximately \$670 million worth of climate benefits annually over a 20-year period.<sup>5</sup> Because the Proposed FIP's benefits significantly outweigh its costs, EPA's proposal to address interstate ozone transport is economically and legally justified.

## **II. EPA Should Clarify Certain Aspects of Its Cost-Benefit Analysis.**

While EPA persuasively demonstrates that the many benefits associated with the Proposed FIP greatly exceed its costs, certain aspects of the agency's cost-benefit analysis could be clarified or supplemented. First, EPA should better explain its choice of analytical timeframes; give the greatest weight to its 20-year timeframe; and consider including a longer analytical timeframe, if costs and benefits will continue beyond 2042 and EPA can reliably determine those costs and benefits. Second, EPA should clarify its approach to discounting, and consider giving less weight to calculations that use a 7% discount rate, as recent research suggests that 7% may no longer be an appropriate social discount rate (particularly when costs and benefits accrue on a multi-decadal time scale). Third, because the most stringent alternative appears to yield greater net benefits than the Proposed FIP (as calculated using a 3% discount rate over a 20-year timeframe), EPA should explain why it did not choose the more stringent alternative.

### **A. EPA should explain how its cost-benefit findings for each timeframe informed its regulatory choices, and further specify why it chose the analytical timeframes that it used for its analysis.**

EPA should further specify how its assessment of costs and benefits for each of the time periods it considered informed its regulatory choices. EPA calculated net benefits for the year 2023, the year 2026, the year 2030, and the twenty-year time period from 2023-2042.<sup>6</sup> The difference in the net benefits for the most stringent regulatory alternative and the proposal varies throughout various "snapshot" years: for instance, the more stringent alternative would confer greater net benefits than the proposal in 2023, but in 2026 the more stringent alternative would

---

<sup>3</sup> 87 Fed. Reg. at 20,157–60.

<sup>4</sup> ENV'TL PROTECTION AGENCY, REGULATORY IMPACT ANALYSIS FOR PROPOSED FEDERAL IMPLEMENTATION PLAN ADDRESSING REGIONAL OZONE TRANSPORT FOR THE 2015 OZONE NATIONAL AMBIENT AIR QUALITY STANDARD 5-31 to 5-42 (2022), [https://www.epa.gov/system/files/documents/2022-03/transport\\_ria\\_proposal\\_fip\\_2015\\_ozone\\_naaqs\\_2022-02.pdf](https://www.epa.gov/system/files/documents/2022-03/transport_ria_proposal_fip_2015_ozone_naaqs_2022-02.pdf) [hereinafter "RIA"].

<sup>5</sup> ENV'T PROT. AGENCY, TECHNICAL MEMORANDUM: ADDENDUM TO THE REGULATORY IMPACT ANALYSIS: MONETIZING CLIMATE BENEFITS FOR THE PROPOSED FIP FOR ADDRESSING REGIONAL OZONE TRANSPORT FOR THE 2015 OZONE NAAQS 12 (Mar. 22, 2022).

<sup>6</sup> See 87 Fed. Reg. at 20,158–60.

confer equivalent or fewer net benefits than the proposal.<sup>7</sup> EPA should make note of these differences and explain which calculation it considers to be most relevant for its decisionmaking.

EPA should also provide more information about how it identified the timeframes it selected in order to assess costs and benefits. EPA's *Guidelines for Preparing Economic Analysis* state that "[t]he choice [of analytical time frame] should be explained and well-documented."<sup>8</sup> In its proposal, EPA does not appear to provide a rationale for selecting a 20-year timeframe for costs and benefits, beyond a brief reference to compliance with Executive Order 12,866, which does not explicitly prescribe any specific time frame.<sup>9</sup> EPA should provide further justification for this choice.

**B. EPA should give its longest analytical timeframe the greatest weight in its decisionmaking, and consider whether a longer analytical timeframe could provide a more accurate estimate of the total costs and benefits of the rule.**

Office of Management and Budget (OMB) guidance suggests that EPA should base its decisionmaking on the total costs and benefits associated with the Proposed FIP rather than those in any particular "snapshot" year. Specifically, OMB's Circular A-4 specifies that "[t]he time frame for [an agency's] analysis should cover a period long enough to encompass all the important benefits and costs likely to result from the rule."<sup>10</sup> Of the estimates EPA provides, the 2023-2042 estimate of total net benefits comes closest to encompassing all of the costs and benefits that will flow from the rule, and EPA should accordingly give the 2023-2042 estimate the most weight in its decisionmaking.

Furthermore, EPA should consider preparing an additional net benefits estimate using an even longer analytical timeframe. EPA's *Guidelines for Preparing Economic Analyses* states that the analytical time frame for cost-benefit analyses "should be long enough that the net benefits for all future years (beyond the time horizon) are expected to be negligible when discounted to the present."<sup>11</sup> The *Guidelines* are clear that "[i]n no case should the time horizon be arbitrary, and the analysis should highlight the extent to which the sign of net benefits or the relative rankings of policy alternatives are sensitive to the choice of time horizon."<sup>12</sup> EPA's existing analysis does not state that the annual benefits of the rule will decline to a negligible level beyond 2042: instead, the net benefits associated with the rule seem to generally increase over time, suggesting that a longer analysis could potentially be useful.<sup>13</sup> While EPA guidance does specify that the time frame for an agency's cost-benefit analysis should be limited to the period

---

<sup>7</sup> *Id.* at 20,158 tbl. IX-6, 20,159 tbl. IX-7. (This is true when estimates that use the same mortality estimate are compared to each other.)

<sup>8</sup> ENV'T'L PROTECTION AGENCY, EPA GUIDELINES FOR PREPARING ECONOMIC ANALYSES 6-5 to 6-6 (2014); *see also id.* at 11-9 ("Presentations of economic analyses should strive for clarity and transparency. An analysis whose conclusions can withstand close scrutiny is more likely to provide policy makers with the information they need to develop robust environmental policies.") [hereinafter "EPA GUIDELINES"].

<sup>9</sup> RIA, *supra* note 4, at ES-25 (referencing EO 12866 in connection with 20-year timeframe); *see also generally* Exec. Order No. 12,866 § 1(a), 58 Fed. Reg. 51,735 (Oct. 4, 1993).

<sup>10</sup> Off. of Mgmt. & Budget, *Circular A-4*, at 15 (2003), <https://perma.cc/X8JM-YZMT> [hereinafter "*Circular A-4*"]

<sup>11</sup> EPA GUIDELINES, *supra* note 8, at 6-5.

<sup>12</sup> *Id.* at 6-6.

<sup>13</sup> RIA, *supra* note 4, at ES-27.

for which the agency can reasonably predict the future,<sup>14</sup> EPA’s analysis does not specify whether it is able to reliably forecast beyond 2042. To determine whether a longer analytical timeframe may be appropriate, EPA could conduct a time horizon sensitivity analysis to determine whether a longer time horizon might lead to greater differences in total net benefits between the proposal and the other two regulatory alternatives it analyzes.

**C. EPA should clarify its approach to discounting, and consider giving greater emphasis to calculations that rely on a 3% discount rate.**

In assessing the Proposed FIP’s effects on the electric sector, EPA seems to have applied a 3.76% real discount rate from the Integrated Planning Model both (1) as a private discount rate, to determine the cost of capital faced by private actors responding to EPA’s proposal<sup>15</sup> and (2) as a social discount rate, to estimate the net present value of costs in the control period.<sup>16</sup> EPA should reconsider the latter use of the 3.76% rate and instead use the social discount rates specified in Circular A-4 (3% and 7%), as it already does elsewhere in the cost-benefit analysis.

Furthermore, as between the two Circular A-4 rates, EPA should consider giving greater weight to estimates using the 3% rate, as this rate is more consistent with the findings of current economics literature. Recent work by Li and Pizer that extends Circular A-4’s current rationale for using a 3% to 7% range indicates that the 7%, capital-based rate is often inappropriate—particularly in many longer-term contexts, including multi-decadal timescales like the 20-year period EPA is using to evaluate the benefits and costs of its proposal.<sup>17</sup> Li and Pizer’s analysis suggests that a capital rate of 3% to 5% is more accurate in such contexts,<sup>18</sup> while other recent work highlights that a consumption rate of between 1% to 2% is more appropriate.<sup>19</sup> Given these findings, EPA should be wary of affording significant weight to estimates calculated using a 7% discount rate.

---

<sup>14</sup> EPA GUIDELINES, *supra* note 8, at 5-4 (“[B]ecause forecasts of the distant future are less reliable than forecasts of the near future, the analyst should balance the advantages of structuring the analysis to include a longer time span against the disadvantages of the decreasing reliability of the forecasts for the future.”).

<sup>15</sup> 86 Fed. Reg. at 20,048 tbl. I.C—1 note c (“The costs presented in this table are consistent with the costs presented in Chapter 4 of the RIA. To estimate these annualized costs, EPA uses a conventional and widely accepted approach that applies a capital recovery factor (CRF) multiplier to capital investments and adds that to the annual incremental operating expenses. Costs were calculated using a 3.76% real discount rate consistent with the rate used in IPM’s objective function for cost-minimization.”).

<sup>16</sup> *Id.* at 20,159 tbl. IX-6 note d (“The costs presented in this table are 2023 annual estimates for each alternative analyzed. An NPV of costs was calculated using a 3.76% real discount rate consistent with the rate used in IPM’s objective function for cost-minimization.”).

<sup>17</sup> See generally Qingran Li & William A. Pizer, *Use of the Consumption Discount Rate for Public Policy over the Distant Future*, 107 J. ENV’T. ECON. & MGMT. 1 (2021) (article ID 102428).

<sup>18</sup> See *id.*; see also generally Qingran Li & William A. Pizer, *Discounting for Public Benefit-Cost Analysis*, RESOURCES FOR THE FUTURE 3 (Jun. 2021), [https://media.rff.org/documents/Li-Pizer\\_IB\\_21-05\\_Discounting.pdf](https://media.rff.org/documents/Li-Pizer_IB_21-05_Discounting.pdf).

<sup>19</sup> See Peter Howard & Jason Schwartz, *Valuing the Future: Legal and Economic Considerations for Updating Discount Rates*, 39 YALE J. REGUL. (forthcoming 2022) (working draft at 17–19), <https://policyintegrity.org/files/publications/SSRN-id3959078.pdf> (explaining that applying Circular A-4’s methodology to recent data indicates a consumption-based discount rate of 2%, and citing other evidence that the consumption-based discount rate should be less than 2%).

**D. EPA should either select the regulatory alternative that yields the highest net benefits or provide a compelling reason for not choosing that alternative.**

EPA’s cost-benefit evaluation of its proposal included three regulatory alternatives. For EGUs, EPA’s more stringent alternative imposes backstop emission rate limits on oil and gas steam units that are greater than 100 MW and lack selective catalytic reduction (SCR) controls operated at more than a 20% historical capacity factor.<sup>20</sup> For non-EGUs, the more stringent alternative would impose emissions limits on all boilers in basic chemical manufacturing, petroleum and coal products manufacturing, and pulp, paper, and paperboard mills, in addition to the sectors covered in the proposal.<sup>21</sup> EPA’s analysis of these alternatives found that the more stringent alternative would, between 2023 and 2042, generate \$10 billion more in net benefits than the Proposed FIP (under a 3% discount rate).<sup>22</sup> EPA should clarify its rationale for forgoing those additional net benefits.

Ordinarily, agencies should select the regulatory alternative that will confer the greatest net benefits, in accordance with executive orders and OMB guidance.<sup>23</sup> If EPA chooses an alternative that does not maximize net benefits—for instance, due to the most net-beneficial alternative’s adverse distributional consequences<sup>24</sup>—the agency should offer an adequate justification for rejecting the alternative that is most economically efficient.<sup>25</sup>

Because the more stringent alternative appears to generate greater net benefits than the proposal over a 20-year time period, EPA should clarify its rationale for selecting the proposal rather than a more stringent alternative. EPA’s analysis of regulatory alternatives for this rule shows that adopting its more stringent alternative will produce a total of approximately \$10 billion of additional net benefits between 2023 and 2042 under a 3% discount rate, which is likely the most appropriate discount rate for this rule.<sup>26</sup> EPA’s main justification for selecting the proposal, as opposed to the most net beneficial alternative, appears to be that “[t]he more stringent alternative does not appear to provide any notable additional ozone reductions compared to the proposed rule in all receptor areas,” but EPA also observes that at receptors in Connecticut and Texas “the average reduction increases by 0.1 ppb and 0.2 ppb with the more stringent alternative, respectively.”<sup>27</sup> The Proposed FIP does not specify why it considers these air quality improvements not to be “notable,” and EPA’s assessment of costs and benefits suggests otherwise: \$10 billion dollars is approximately 5% of the total net benefits of the rule.

---

<sup>20</sup> RIA, *supra* note 4 at 8-1 to 8-2; 87 Fed. Reg. at 20,037 (defining SCR controls).

<sup>21</sup> RIA, *supra* note 4 at 8-1 to 8-2.

<sup>22</sup> 87 Fed. Reg. at 20,160 tbl. IX-9; *see supra* text accompanying notes 15–21.

<sup>23</sup> *Circular A-4*, *supra* note 10, at 5 (explaining that the motivation for regulatory analysis is partly to understand which alternative is most cost-effective, which is the alternative that generates the largest net benefits to society); Exec. Order 12,866 §1(a), 58 Fed. Reg. 51,735, 51,736 (Oct. 4, 1993) (agencies should “select those approaches that maximize net benefits” when “choosing among alternative regulatory approaches”); Memorandum on Modernizing Regulatory Review, 86 Fed. Reg. 7223, 7223 (Jan. 26, 2021) (reaffirming the core principles of Executive Orders 12,866 and 13,563).

<sup>24</sup> *See supra* note 23 and accompanying text.

<sup>25</sup> EPA GUIDELINES, *supra* note 8, at 1-4 (“The policy that maximizes net benefits is considered the most efficient”); *Int’l Ladies’ Garment Workers’ Union v. Donovan*, 722 F.2d 795, 816 n.41 (D.C. Cir. 1983) (agencies should provide an explanation for rejecting alternatives).

<sup>26</sup> 87 Fed. Reg. at 20,160 tbl. IX-9; *see* text accompanying notes 15–21 *supra*.

<sup>27</sup> 87 Fed. Reg. at 20,160.

In addition, EPA also suggested in its assessment of impactful industries that 0.01 ppb represented a “meaningful conservative breakpoint” at which to deem an industry’s contribution to certain receptors significant.<sup>28</sup> This finding seems to be in some tension with EPA’s articulated rationale for disregarding air quality improvements that are an order of magnitude larger. EPA should either select the most beneficial alternative or provide a compelling rationale for its decision to leave these net benefits on the table.

Clarifying EPA’s approach to rounding could also potentially help explain EPA’s rationale for choosing the proposal rather than a more stringent alternative.<sup>29</sup> For instance, subtracting the figures that EPA provides for costs from the figures that EPA provides for benefits over the period 2023-2042 suggests that the more stringent alternative would yield \$6 billion in additional net benefits even with a 7% discount rate. (While the tables of costs and benefits that EPA provides for other timeframes specify that columns may not add due to rounding, the table that outlines costs and benefits for 2023-2042 does not specifically include that caveat.)<sup>30</sup> As previously explained, EPA should give greater weight to values discounted using a 3% discount rate than values that result from a 7% discount rate.<sup>31</sup> Nevertheless, for clarity, EPA should provide further context for this apparent discrepancy in calculations that use the 7% discount rate.

### **III. EPA Should Expand Its Distributional Analysis to Better Account for the Effects of the Proposed FIP on Different Subpopulations.**

While EPA takes the important step of conducting a distributional analysis for the baseline and its regulatory alternatives, the analysis could be improved. In the Distributional Analysis contained within its regulatory impact analysis (RIA), EPA recognizes that downwind ozone exposure disproportionately impacts vulnerable subpopulations.<sup>32</sup> The agency then determines that both the Proposed FIP and the more stringent regulatory alternative would improve ozone concentrations among those subpopulations and therefore concludes that distributional outcomes would not disproportionately burden those groups.<sup>33</sup>

We applaud the demographic analysis conducted by EPA, which aids in answering the important question of who would benefit from the Proposed FIP. However, this analysis appears

---

<sup>28</sup> EPA, SCREENING ASSESSMENT OF POTENTIAL EMISSIONS REDUCTIONS, AIR QUALITY IMPACTS, AND COSTS FROM NON-EGU EMISSIONS UNITS FOR 2026 22-23 (2022), <https://www.epa.gov/system/files/documents/2022-03/nonegu-reductions-ppb-impacts-2015-o3-transport-fip-final-memo.pdf> [hereinafter “EPA SCREENING ASSESSMENT”].

<sup>29</sup> Based on the total values that EPA provided, when a 3% discount rate is applied, the annualized values of the more stringent option and the proposal seem to only appear equivalent due to rounding. 87 Fed. Reg. at 20,160 tbl. IX-9. Given the magnitude of costs and benefits associated with this rule, EPA may want to reconsider whether rounding to two significant digits is an appropriate approach: rounding with such large quantities at play can lead to billion-dollar differences in EPA’s calculated and publicly reported values. In addition, presenting costs and benefits in millions of 2016 dollars may imply a greater level of precision than EPA is able to achieve, given that EPA appears to be rounding to two significant digits. EPA might consider presenting costs and benefits in billions of dollars instead (with decimal places as appropriate) for clarity.

<sup>30</sup> Compare 87 Fed. Reg. at 20,158 tbl. IX-6 n.b (“Rows may not appear to add correctly due to rounding”) with *id.* at 20,160 tbl. IX-9.

<sup>31</sup> See text accompanying notes 15–21 *supra*.

<sup>32</sup> RIA, *supra* note 4, at 7-14.

<sup>33</sup> *Id.* at 7-32.

to fall short of informing EPA and the public of the proposal's full distributional consequences, in accordance with relevant executive guidance.<sup>34</sup>

There are several ways EPA can improve its distributional analysis:

- *First*, EPA should consider distributional outcomes for near-source populations in its distributional analysis, rather than exclusively focusing on downwind impacts.
- *Second*, EPA should qualitatively discuss the relative distributional outcomes for all subpopulations of concern.
- *Third*, EPA should use a more granular geographic scale and disaggregate impacts at a smaller scale than state-wide.
- *Fourth*, EPA should quantitatively evaluate the same pollutants in its distributional analysis that it does in its larger cost-benefit analysis.
- *Fifth*, EPA should clearly show its statistical analysis in order to support the conclusions it draws. The current analysis lacks statistical power to conclude significant reductions in air pollutants due to the Proposed FIP.

EPA should aim to address these issues in its analysis for the final FIP or qualitatively discuss any elements for which it needs additional time and resources to develop the appropriate analytical techniques.

#### **A. EPA should consider near-source emissions in its distributional analysis.**

EPA's baseline demographic proximity analysis indicates that Hispanic and Black people, as well as people below the poverty level and with less education, are more likely to live near affected sources compared to the national average<sup>35</sup> and likewise are more likely to face higher ozone exposures.<sup>36</sup> However, its distributional analysis focuses on how the reduction of NOx from these sources will affect ozone concentrations for populations located *downwind*, rather than populations near the affected sources themselves.<sup>37</sup>

EPA notes that the goal of the Transport Rule is to “require NOx emissions reductions that will eliminate significant contribution to nonattainment or interference with maintenance of the 2015 ozone NAAQS in *downwind* areas.”<sup>38</sup> However, this does not preclude EPA from considering co-benefits for upwind areas—particularly here in its distributional analysis, where EPA has already demonstrated significant environmental justice concerns exist for vulnerable subpopulations living near EGUs. In determining which regulatory alternative provides the highest distributional benefits, EPA should include consideration of how the Proposed FIP affects vulnerable populations located near affected sources.

---

<sup>34</sup> See *Circular A-4*, *supra* note 10; Exec. Order 12,866, *supra* note 9; Exec. Order 13,990, 86 Fed. Reg. 7037 (Jan. 25, 2021); Exec. Order No. 14,008, § 219, 86 Fed. Reg. 7619 (Feb. 1, 2021).

<sup>35</sup> RIA, *supra* note 4, at 7-8.

<sup>36</sup> *Id.* at 7-14.

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

<sup>38</sup> *Id.* at 7-17 (emphasis added).



**B. EPA should explain whether the Proposed FIP will improve or worsen disproportionate pollution burdens on disadvantaged communities.**

In the RIA, EPA concludes that none of the regulatory alternatives under consideration will raise “meaningful EJ concerns.”<sup>39</sup> However, EPA also notes that Hispanic, Asian, and Native American people as well as less educated people will face *relatively smaller ozone concentration improvements* as compared to the overall population.<sup>40</sup> Given that EPA also found that Hispanic, Asian, and Native American people are *more likely* to live in areas of high ozone concentration than any other group,<sup>41</sup> the proportionally lower improvement in ozone concentration means that these already vulnerable populations may remain relatively worse off than other subpopulations as a result of the Proposed FIP—and in fact, the Proposed FIP may *worsen* the disparity in air quality for these vulnerable populations.

For example, imagine that Area X has a majority non-Hispanic White population and a baseline ozone concentration of 20 ppb. Nearby Area Y has a majority Native American population with ozone concentrations of 40 ppb—a concentration that is 2x as high as Area X. A hypothetical regulatory policy that reduces ozone concentration by 5 ppb in both area X and Y would actually *worsen* this inequality, as the majority-Native American Area Y would now face ozone concentrations that are 2.3x higher than the majority-White Area X (35ppb versus 15ppb).

However, by EPA’s logic in the Proposed FIP, this hypothetical example would not raise environmental justice concerns because ozone concentrations decrease for all populations. This turns the goal of distributional analysis on its head, as EPA has not fully evaluated the *relative* distribution of benefits as compared to baseline conditions. A complete distributional analysis should show whether the benefits of reduced pollution primarily accrue to disadvantaged communities, or if these communities will continue to be disproportionately burdened by higher pollution.

EPA should fully evaluate the relative distribution of air pollution impacts for all subpopulations, rather than simply concluding that the Proposed FIP does not raise environmental justice concerns so long as each group experiences *some* reduction in pollution.

**C. EPA should use a more granular geographic scale for its analysis.**

EPA should conduct its distributional analysis at a more granular geographic level to capture the heterogeneous air quality impacts within a given area. EPA’s current unit of analysis, 12 kilometers x 12 kilometers cells across the contiguous U.S.,<sup>42</sup> is roughly equivalent to the size of a medium-sized city such as Pittsburgh, Pennsylvania.<sup>43</sup> Thus, the current aggregation level of EPA’s analysis misses all distributional impacts within the area of a medium-sized city, despite the potential for significant disparities at this scale.

---

<sup>39</sup> *Id.* at 7-32.

<sup>40</sup> *Id.* at 7-25.

<sup>41</sup> *Id.* at 7-21.

<sup>42</sup> *Id.* at 7-23.

<sup>43</sup> Pittsburgh is 151 square kilometers.

EPA should improve the granularity to a finer scale, ideally 1 kilometer by 1 kilometer for dense urban areas. EPA can use existing tools, like InMAP, which allows for this level of finer spatial resolution. At this scale, EPA could better determine the impact of its regulation on the populations of interests, particularly within large urban areas where the majority of the U.S. population live,<sup>44</sup> which can have significant variations in air quality.<sup>45</sup> For example, using InMAP's more granular scale, the Agency could analyze the distributional impacts within neighborhoods rather than at a city level.<sup>46</sup>

In addition, EPA should also disaggregate its analysis comparing the environmental justice impacts of its regulatory alternatives, which currently relies on state-level averages.<sup>47</sup> As EPA notes, “[a]ir quality improvements across demographic groups within individual states are variable.”<sup>48</sup> Thus, it is unclear why EPA relies on this aggregate state-level data to conclude that none of the regulatory alternatives create environmental justice concerns.<sup>49</sup> EPA cannot properly compare the distributional outcomes of the regulatory alternatives under consideration without a disaggregated analysis breaking down the air quality impacts at a much smaller geographical scale.

For more information on the importance of using a granular spatial scale in environmental justice and distributional analyses, see Policy Integrity's report, *Making Regulations Fair: How Cost-Benefit Analysis Can Promote Equity and Advance Environmental Justice*.<sup>50</sup>

#### **D. EPA should quantitatively evaluate the same pollutants in its distributional analysis that it does in its overall cost-benefit analysis.**

In evaluating the overall costs and benefits of the Proposed FIP, EPA calculates expected reductions in NO<sub>x</sub>, SO<sub>2</sub>, CO<sub>2</sub>, and PM<sub>2.5</sub>.<sup>51</sup> However, in its distributional analysis, EPA discusses reductions in CO<sub>2</sub> and PM<sub>2.5</sub> only qualitatively, and does not discuss SO<sub>2</sub> at all.<sup>52</sup> The agency's quantitative analysis is limited to NO<sub>x</sub> reductions and their accompanying impacts on ozone

---

<sup>44</sup> Urban Areas Facts, U.S. Census Bureau, <https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural/ua-facts.html> (last accessed May 10, 2022).

<sup>45</sup> See, e.g., Jonah Lipsitt, et al., *Spatial Analysis of COVID-19 and Traffic-Related Air Pollution in Los Angeles*, 153 ENV'T INT'L 106531 (2021) (applying high-resolution exposure model to neighborhoods of Los Angeles County to allow for more accurate pollution exposure); see also Gerard Hoek et al., *A Review of Land-Use Regression Models to Assess Spatial Variation of Outdoor Air Pollution*, 42 ATMOSPHERIC ENV'T 7561–78 (2008) (a review of models and approaches for assessing intra-urban air pollution differences).

<sup>46</sup> See, e.g., DANIELLE SPIEGEL-FELD ET AL., GUARINI CTR. ON ENV'T, ENERGY, AND LAND USE L. ET AL., CARBON TRADING FOR NEW YORK CITY'S BUILDING SECTOR at 33 (June 2021), [https://policyintegrity.org/files/publications/2021-11-15\\_Guarini\\_-\\_Carbon\\_Trading\\_For\\_New\\_York\\_Citys\\_Building\\_Sector.pdf](https://policyintegrity.org/files/publications/2021-11-15_Guarini_-_Carbon_Trading_For_New_York_Citys_Building_Sector.pdf).

<sup>47</sup> RIA, *supra* note 4, at 7-17 to 7-19.

<sup>48</sup> *Id.* at 7-17.

<sup>49</sup> *Id.* at 7-18.

<sup>50</sup> JACK LIENKE ET AL., INST. FOR POL'Y INTEGRITY, MAKING REGULATIONS FAIR: HOW COST-BENEFIT ANALYSIS CAN PROMOTE EQUITY AND ADVANCE ENVIRONMENTAL RACISM at 6–10 (Aug. 2021), <https://policyintegrity.org/publications/detail/making-regulations-fair>.

<sup>51</sup> 87 Fed. Reg. at 20,156 tbl. IX-1.

<sup>52</sup> RIA, *supra* note 4, at 7-26 to 7-30.

concentrations.<sup>53</sup> For a proper evaluation of distributional impacts from the Proposed FIP and the identified alternatives, EPA should consider all relevant pollutants.

#### **E. EPA should provide stronger statistical evidence to support its conclusions.**

Finally, EPA calculates for each population of concern changes in ozone concentration resulting from the Proposed FIP and the identified alternatives,<sup>54</sup> but it fails to conduct statistical tests that show whether these changes in concentration are statistically different from zero. EPA is also not consistent in what it considers “significant” for changes in ozone concentration. In its analysis to determine which industries are significant contributors to downwind pollution, EPA uses 0.01 ppb as a “meaningful conservative breakpoint,” to distinguish sources with a contribution of “greater than or equal to 0.01 ppb to at least 10 receptors.”<sup>55</sup> Conversely, in its distributional analysis, EPA characterizes the expected reduction in ozone concentration for most receptors as being “less than 0.04 ppb” and describes any variance in reduction between populations as “very small” rather than quantifying it.<sup>56</sup> Likewise, the agency describes—without quantifying—the distribution of benefits between the regulatory alternatives under consideration as “reasonably similar.”<sup>57</sup> If EPA determines that a contribution of 0.01 ppb is significant in distinguishing between sources, the agency should then explain why changes smaller than 0.04 ppb are not considered significant in its distributional analysis.

The current discussion in EPA’s distributional analysis lacks sufficient data on statistical power, which is critical to EPA’s comparison of regulatory alternatives and for EPA’s analysis of which groups would benefit most from the Proposed FIP.

#### **IV. EPA Should Treat Distributional Effects as an Unquantified Benefit or Cost Consistent with Executive Guidance**

Both in the comparison of alternatives and within the justification for the selection of one alternative over others, EPA should treat distributional outcomes as it would an unquantified or nonmonetized effect. Executive Order 12,866 instructs agencies to incorporate equity consideration into their cost-benefit analyses and regulatory decisions,<sup>58</sup> specifically recognizing that “distributional impacts” and equity” are relevant to assessing net benefits.<sup>59</sup> Circular A-4 instructs agencies to “provide a separate description of distributional effects (i.e., how both benefits and costs are distributed among sub-populations of particular concern) so that decision makers can properly consider them along with the effects on economic efficiency,” and to describe distributional effects “quantitatively to the extent possible.”<sup>60</sup> In 2011, President Obama

---

<sup>53</sup> *Id.* at 7-1 to 7-26.

<sup>54</sup> *Id.* at 7-23.

<sup>55</sup> 86 Fed. Reg. at 20,083.

<sup>56</sup> RIA, *supra* note 4, at 7-23.

<sup>57</sup> *Id.* at 7-25.

<sup>58</sup> Exec. Order No. 12,866, *supra* note 9, § 1(a) (“Further, in choosing among alternative regulatory approaches, agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.”).

<sup>59</sup> *Id.* § 1(b)(5).

<sup>60</sup> *Circular A-4*, *supra* note 10, at 14.

issued Executive Order 13,563, which reaffirmed Executive Order 12,866 and stated that agencies conducting cost-benefit analysis “may consider (and discuss qualitatively) values that are difficult or impossible to quantify, including equity, human dignity, fairness, and distributional impacts.”<sup>61</sup> Separate from these directives on cost-benefit analysis, EPA and other agencies have been further instructed to consider environmental justice considerations in their decisionmaking.<sup>62</sup> As already noted, President Biden has further reaffirmed commitments to prioritize environmental justice and the development of procedures to improve consideration of the distributional impacts of regulations.<sup>63</sup>

Consistent with these directives, EPA should treat any desirable (or undesirable) distributional effects as an unquantified benefit (or cost) that it compares alongside other costs and benefits.<sup>64</sup> EPA can draw upon its extensive expertise and experience in analyzing other direct unquantified benefits to inform its consideration of distributional effects.

As a concrete example of how a qualitative discussion of distributional benefits could be incorporated into EPA’s cost-benefit analysis, consider policy A and alternative B which generate five billion dollars and five billion plus one dollars, respectively. In policy A, the five billion dollars are distributed equally across all individuals in society. In alternative B, the five billion plus one dollars are distributed to one already-rich individual. The costs to implement each policy are equal. From a pure efficiency perspective, alternative B maximizes net benefits. However, policy A results in a wider distribution of benefits, and a qualitative discussion emphasizing these distributional benefits could justify EPA’s decision to proceed with policy A over alternative B.<sup>65</sup>

## V. EPA May Legally Regulate Emissions from Non-EGUs in Its Proposed FIP.

While the 2011 Cross State Air Pollution Rule and subsequent updates to it applied only to EGUs,<sup>66</sup> the Proposed FIP establishes emission limits for non-EGU sources as well.<sup>67</sup> The inclusion of these non-EGUs is consistent with the text of the Good Neighbor Provision and with EPA’s longstanding interpretation of that provision.

The Good Neighbor Provision expressly prohibits “*any source or other type of emissions activity*” within a state from emitting air pollutants that will “contribute significantly to nonattainment in, or interfere with maintenance by” another state with respect to a national

---

<sup>61</sup> Exec. Order No. 13,563 § 1(c), 76 Fed. Reg. 3821, 3821 (Jan. 18, 2011).

<sup>62</sup> Exec. Order No. 12,898 § 1-101, 59 Fed. Reg. 7629 (Feb. 16, 1994) (“To the greatest extent practicable and permitted by law, . . . each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations . . .”).

<sup>63</sup> See Exec. Order No. 13,990, *supra* note 34, § 1; Exec. Order No. 14,008, *supra* note 34, § 219; Modernizing Regulatory Review: Memorandum for the Heads of Executive Departments and Agencies § 2(b)(ii), 86 Fed. Reg. at 7223.

<sup>64</sup> See Richard L. Revesz & Samantha P. Yi, *Distributional Consequences and Regulatory Analysis*, 52 ENV’T L. 53, 96–97 (2022) (discussing why this approach should be preferred).

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

<sup>66</sup> Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 Fed. Reg. 48,208, 48,248 (Aug. 8, 2011).

<sup>67</sup> 87 Fed. Reg. at 20,039.

ambient air quality standard (NAAQS).<sup>68</sup> Consistent with this expansive statutory text, EPA has, over decades and under administrations of both parties, interpreted the Good Neighbor Provision to authorize measures that address non-EGUs. For instance, in its “NO<sub>x</sub> SIP Call” regulations—finalized in 1998—EPA’s analysis assumed state regulation of large industrial boilers, and the federal implementation plan that EPA formulated in case states did not submit compliant SIPs covered those sources.<sup>69</sup> In 2005, EPA adopted the Clean Air Interstate Rule (CAIR) to regulate interstate transport of ozone and PM<sub>2.5</sub>, and allowed states with good neighbor obligations to include non-EGUs in their CAIR trading programs.<sup>70</sup> When the CAIR trading program concluded, EPA issued guidance instructing states to continue to follow the NO<sub>x</sub> SIP call’s reduction requirements for large non-EGU boilers and combustion turbines.<sup>71</sup> And while EPA’s 2015 Cross-State Air Pollution Rule (CSAPR) did not address non-EGUs, EPA expressly contemplated when issuing it that future good neighbor rulemaking could require non-EGU reductions.<sup>72</sup> EPA found that while reductions at non-EGUs were not achievable below CSAPR’s \$500 per ton threshold, “potentially substantial” non-EGU reductions would be available in future rulemakings with higher cost thresholds.<sup>73</sup>

No court has objected to the inclusion of non-EGUs in EPA’s Good Neighbor rules.<sup>74</sup> Rather, in response to a challenge to EPA’s regulation of industrial boilers in the NO<sub>x</sub> SIP Call, the D.C. Circuit was clear that EPA had appropriately regulated industrial boilers as significant contributors to nonattainment, and that EPA had not acted arbitrarily in doing so.<sup>75</sup> EPA’s

---

<sup>68</sup> 42 U.S.C. § 7410 (a)(2)(D)(i) (emphasis added).

<sup>69</sup> See Clean Air Act Handbook § 3:7 (2021) (citing 62 Fed. Reg. 60,318 (Nov. 7, 1997)); see also Findings of Significant Contribution and Rulemaking on Section 126 Petitions for Purposes of Reducing Interstate Ozone Transport, 63 Fed. Reg. 56,292, 56,292, 56,305–08, 56,314 (Oct. 21, 1998) (proposing federal implementation plan including non-EGUs if compliant SIPs were not submitted).

<sup>70</sup> 40 C.F.R. § 51.123(aa)(2)(1) (“The state may . . . include all non-EGUs subject to the State’s emissions trading program”); see also EPA, QUESTIONS AND ANSWERS CONCERNING NON-EGUS TRANSITIONING FROM THE NO<sub>x</sub> BUDGET TRADING PROGRAM TO THE CAIR NO<sub>x</sub> PROGRAM, <https://archive.epa.gov/airmarkets/programs/cair/web/pdf/qsasfornonegus.pdf> (instructing states on the effects of bringing or not bringing non-EGUs into their Clean Air Interstate Rule trading program).

<sup>71</sup> EPA, CROSS-STATE AIR POLLUTION RULE (CSAPR) FACT SHEET – NO<sub>x</sub> SIP CALL TRANSITION FOR LARGE NON-EGUS 1 (n.d.), [https://www.epa.gov/sites/production/files/2016-05/documents/fact\\_sheet\\_nox\\_sip\\_call\\_transition\\_for\\_large\\_non-egus.pdf](https://www.epa.gov/sites/production/files/2016-05/documents/fact_sheet_nox_sip_call_transition_for_large_non-egus.pdf).

<sup>72</sup> Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals, 76 Fed. Reg. 48,208, 48,256 (Aug. 8, 2011).

<sup>73</sup> *Id.* (“The ozone-season NO<sub>x</sub> reductions available in the Transport Rule states between the \$500/ton and \$1,000/ton cost thresholds amount to less than 3,000 tons. EPA believes that potentially substantial non-EGU ozone-season NO<sub>x</sub> reductions become available approaching the \$1,000/ton cost threshold.”).

<sup>74</sup> See *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1060–63 (D.C. Cir. 2001) (addressing various issues related to regulation of boilers under the Good Neighbor Provision without objecting to regulation of non-EGUs); *Michigan v. EPA*, 213 F.3d 690–93 (D.C. Cir. 2000) (similar).

<sup>75</sup> *Michigan*, 213 F.3d at 690–93. In this case, evidence in the record ran contrary to industry plaintiff’s claim that “industry boilers as a group have no impact on long-range industry transport,” and “EPA reiterated this finding[], it relied on the finding, and industry plaintiffs never challenged it during the comment period. Therefore, [the court] cannot say EPA’s inclusion of non-EGUs in the group of significantly contributing sources was arbitrary.” *Id.* (emphasis added).

proposal to address pollution from non-EGUs—a determination rooted in a well-established, court-approved methodology<sup>76</sup>—appropriately exercises its statutory authority.

## **VI. EPA Should Further Explain Its Selection of Covered Non-EGU Sources, and Consider Expanding the Rule’s Coverage to Additional Sources.**

While EPA’s proposal appropriately broadens previous regulations to encompass non-EGUs, EPA should provide additional details as to why it selected the non-EGU sources covered by the proposed FIP, and further explain why it chose to exclude other, seemingly comparable sources. First, EPA should provide additional reasons for choosing a 100 ton per year of NO<sub>x</sub> cutoff for non-EGUs, in addition to eliminating any sources of emissions that it considered to already be well-controlled.<sup>77</sup> To justify this decision, EPA states that it “believe[s] that emissions units that are smaller [than those which emit 100 tons per year or more] may already be controlled and that reductions from these smaller units are likely to be more costly.”<sup>78</sup> EPA should provide further explanation of the basis for these views.

Second, EPA should further explain the rationale behind its approach to “Tier 2” of its regulatory structure for non-EGUs, and consider whether it should apply emission limitations to a broader range of sources in this tier. After running its Control Strategy Tool analysis, EPA concluded that most non-EGU units that it had not already selected as “Tier 1” sources—and for which controls were available at less than its \$7,500 cost threshold—were boilers.<sup>79</sup> EPA thus decided to limit its Tier 2 coverage to boilers.<sup>80</sup> The mere fact that boilers comprise the majority of relevant emissions units does not, however, preclude EPA from regulating other source types as well. The remaining 41% of potential Tier 2 emission units cover 14 internal combustion engines and 77 industrial processes, and could be responsible for significant collective emissions.<sup>81</sup> EPA should thus either further explain its decision not to regulate non-boiler Tier 2 emissions units, or consider regulating such units in its final rule or future rulemakings.

## **VII. While EPA’s Rule Is An Important Step to Alleviate Cross-State Air Pollution, It Generally Falls Short of Achieving Attainment.**

As previously discussed, EPA’s proposal institutes important measures to address emissions from sources that either contribute significantly to nonattainment of air quality standards or interfere with their maintenance, discharging EPA’s statutory obligation and

---

<sup>76</sup> *EPA v. EME Homer City Generation, L.P.*, 572 U.S. 489, 524 (2014) (holding that EPA’s approach was a “permissible, workable, and equitable interpretation of the Good Neighbor Provision.”)

<sup>77</sup> 87 Fed. Reg. at 20,083.

<sup>78</sup> EPA SCREENING ASSESSMENT, *supra* note 28, at 3 n.8.

<sup>79</sup> *Id.* at 5 (“[B]ecause boilers represent the majority emissions unit in the Tier 2 industries for which there were controls that cost up to \$7,500 per ton [], [EPA] targeted emissions reductions and air quality improvements in Tier 2 industries by identifying potentially impactful industrial, commercial, and institutional (ICI) boilers.”).

<sup>80</sup> 87 Fed. Reg. at 20,084.

<sup>81</sup> EPA SCREENING ASSESSMENT, *supra* note 28, at 5. If this interpretation of EPA’s approach is correct, EPA should also modify the title of this table to clarify that its contents are those units that fall below the \$7,500 cost threshold, as the current title of the table does not clearly specify this.

generating billions of dollars of net benefits.<sup>82</sup> However, the “stated goal of the Good Neighbor Provision [is] attainment of NAAQS,” and “the Good Neighbor Provision requires EPA to seek downwind attainment of NAAQS notwithstanding [] uncertainties.”<sup>83</sup> EPA estimates that its proposal will only lead to three receptors improving in attainment status in 2023 and only six receptors improving in attainment status in 2026.<sup>84</sup> In other words, only 3% and 6% of the receptors that will be out of attainment in 2023 and 2026 (respectively) will change attainment status as a consequence of the Proposed FIP.<sup>85</sup> Accordingly, while EPA’s proposal represents a significant initial step, additional efforts to bring polluted areas into attainment will still be needed.

Respectfully,

Andrea Bell, Clinical Associate  
Meredith Hankins, Senior Attorney  
Jack Lienke, Regulatory Policy Director  
Amanda Zerbe, Legal Fellow

Institute for Policy Integrity at NYU School of Law  
[jack.lienke@nyu.edu](mailto:jack.lienke@nyu.edu)

---

<sup>82</sup> *Wisconsin v. Env't Prot. Agency*, 938 F.3d 303, 315 (D.C. Cir. 2019) (“[T]he Good Neighbor Provision calls for elimination of upwind States’ significant contributions on par with the relevant downwind attainment deadlines.”); *see also North Carolina v. Env’t Prot. Agency*, 531 F.3d 896, 908 (D.C. Cir.), *on reh’g in part*, 550 F.3d 1176 (D.C. Cir. 2008) (holding that because the Clean Air Interstate Rule was “designed as a complete remedy to section 110(a)(2)(D)(i)(I) problems . . . [the rule] must do more than achieve something measurable; it must actually require elimination of emissions from sources that contribute significantly and interfere with maintenance in downwind nonattainment areas.”)

<sup>83</sup> *EME Homer City Generation*, 572 U.S. at 522 n.23, 523. *See also id.* at 523 (“[W]hile EPA has a statutory duty to avoid over-control, the Agency also has a statutory obligation to avoid “under-control,” *i.e.*, to maximize achievement of attainment downwind.”).

<sup>84</sup> 87 Fed. Reg. at 20,160 (In 2023, the proposal would bring two receptors from maintenance-only into attainment and one receptor from nonattainment into maintenance-only; in 2026, the proposal would lead to one receptor switching from nonattainment to maintenance-only, and five receptors switching from maintenance-only to attainment).

<sup>85</sup> *Id.*; ENV’T L PROTECTION AGENCY, AIR QUALITY MODELING TECHNICAL SUPPORT DOCUMENT 19 (2022), <https://www.epa.gov/system/files/documents/2022-03/air-quality-modeling-technical-support-document-19-proposed-fip.pdf>. In the base case, 111 receptors are projected to be out of attainment in 2023 and 96 receptors will be out of attainment in 2026. 3 divided by 111 times 100 equals approximately 3%. 6 divided by 96 times 100 equals approximately 6%.