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VIA ELECTRONIC SUBMISSION

Environmental Protection Agency
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Subject: Comments on Proposed Rules on Coal Combustion Residuals, 75 Fed. Reg. 35,128 (June 21, 2010), Docket No. EPA-HQ-RCRA-2009-0640

The Institute for Policy Integrity submits the following comments on the Proposed Rules on Coal Combustion Residuals (“CCRs”) released by the Environmental Protection Agency (“EPA”) on June 21, 2010.

The Institute for Policy Integrity at New York University School of Law 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 has proposed two alternative rules for the regulation of CCRs. The first alternative would reverse the “Bevill Regulatory Determinations” issued by EPA in 1993 and 2000, and would list CCRs as a “special waste” subject to regulation under Subtitle C of the Resource Conservation and Recovery Act (“RCRA”). This alternative subjects CCRs to many of the same standards as other wastes regulated under Subtitle C but also includes standards tailored to the unique problems of CCR disposal. The second proposal would not change the regulatory status of CCRs but would issue minimum national standards for their disposal under Subtitle D of RCRA. Neither alternative would regulate CCRs that are “beneficially used” or used in “minefilling.” EPA has not determined which of these two proposed rules should be implemented and is requesting comment on this broad issue as well as many other subsidiary issues related to CCRs.

While either alternative would represent an important step forward in protecting both public health and the environment, there are several changes that EPA should make in order to ensure that its decision is based on sound analysis:

- Reverse the Bevill Regulatory Determinations if this will increase net societal welfare, as allowed by the relevant sections of RCRA and directed by Executive Order 12,866;
- Fix the misleading and inaccurate presentation of the “stigma” scenario as being on equal footing with more likely scenarios;
- Take any appropriate additional steps to minimize the likelihood of unwarranted “stigma” effects;

- Perform a more complete analysis of likely health benefits from regulation of CCRs; and
- Ensure that the other methods for estimating costs and benefits are both proper and consistent.

If EPA properly addresses these issues, it is overwhelmingly likely that a reversal of the Bevill Regulatory Determination will be the proper outcome and EPA should finalize its proposed rule for regulating CCRs under Subtitle C of RCRA.

There are additional issues with the Regulatory Impact Analysis and preamble that the agency should correct by:

- Performing a more thorough and fine-grained environmental justice analysis; and
- Including analysis of other reasonable policy alternatives, including the “hybrid C and D” option that was considered in an OMB Review Draft of the Regulatory Impact Analysis.

Going forward, EPA should also:

- Regulate the disposal of CCRs in minefilling operations as soon as possible; and
- If the Bevill Regulatory Determinations are not reversed, design a financial assurance option that incentivizes proper behavior and reduces moral hazard.

I. EPA Should Consider Costs and Benefits when Determining Whether to Regulate CCRs under Subtitle C

RCRA clearly gives EPA discretion to determine whether regulation of CCRs under Subtitle C is “unwarranted.” Given Executive Order 12,866, this determination should include prudent use of cost-benefit analysis. The Bevill Regulatory Determinations should be reversed if the net societal benefits from regulation under Subtitle C are higher than other regulatory options.

RCRA Gives EPA Substantial Discretion to Regulate CCRs under Subtitle C

The statutory authority to regulate CCRs under Subtitle C of RCRA is given by subsection 3001(b)(3)(C):

[T]he Administrator shall, after public hearings and opportunity for comment, either determine to promulgate regulations under [Subtitle C] for each waste listed in subparagraph (A) [including CCRs] of this paragraph or determine that such regulations are unwarranted. The Administrator shall publish his determination, which shall be based on information developed or accumulated pursuant to such study, public hearings, and comment, in the Federal Register accompanied by an explanation and justification of the reasons for it.

This determination is known as the “Bevill Regulatory Determination.” The relevant information that the Administrator must use includes a study mandated by subsection 8002(n):

The Administrator shall conduct a detailed and comprehensive study and submit a report on the adverse effects on human health and the environment, if any, of the disposal and utilization of [CCRs]. Such study shall include an analysis of—

- (1) the source and volumes of such material generated per year;
- (2) present disposal and utilization practices;
- (3) potential danger, if any, to human health and the environment from the disposal and reuse of such materials;

- (4) documented cases in which danger to human health or the environment from surface runoff or leachate has been proved;
- (5) alternatives to current disposal methods;
- (6) the cost of such alternatives;
- (7) the impact of those alternatives on the use of coal and other natural resources; and
- (8) the current and potential utilization of such materials.

In furtherance of this study, the Administrator shall, as he deems appropriate, review studies and other actions of other Federal and State agencies concerning such material and invite participation by other concerned parties, including industry and other Federal and State agencies, with a view toward avoiding duplication of effort. . . .

These two subsections are the only statutory guidance that EPA is given in making the Bevill Regulatory Determination.¹

Recently, in *Entergy v. Riverkeeper*, the Supreme Court affirmed that just because a statute does not require analysis of costs or benefits does not necessarily mean an agency cannot perform cost-benefit analysis.² *Entergy* more generally supports the proposition that broad statutory language allows EPA to weigh the social costs and benefits of regulation unless doing so is directly contrary to the statute.

In this case, the broad statutory mandate is contained in subsection 3001(b)(3)(C). EPA need only determine whether or not Subtitle C regulations for CCRs would be “unwarranted.” While this determination must be based on all the information accumulated in the course of the required study, public hearings, and public comments, Congress mandated several substantive areas of consideration in subsection 8002(n). These areas include environmental damage and adverse human health effects³ and the cost of alternatives to current disposal methods.⁴ These two factors encompass the health and environmental benefits of proposed regulations as well as the costs of the alternative disposals that would be mandated by the potential regulations. The other criteria are all areas that would need to be analyzed in any reasonable cost-benefit analysis.⁵ As a result, EPA would be allowed to base its determination under subsection 3001(b)(3)(C) on a prudent cost-benefit analysis.

In the past, EPA has not explicitly interpreted these sections of RCRA in this manner.⁶ But under the Supreme Court doctrine established by *Chevron v. NRDC*, courts will uphold any reasonable

¹ It should be noted that, for example, there is no requirement that CCRs meet the statutory or regulatory definitions of “hazardous waste.” The directive in subsection 8002(n) of the Resource Conservation and Recovery Act to submit a study on the “the adverse effects on human health and the environment” bears some relation to part of the statutory definition of “hazardous waste” in subsection 1004(5) (“a solid waste, or combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may—(A) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.”). However, this merely confirms that these statutory provisions share the goal of protecting the environment and human health.

² *Entergy Corp. v. Riverkeeper, Inc.*, 129 S.Ct. 1498, 1509 (2009).

³ Resource Conservation and Recovery Act §§ 8002(n), (n)(3), 42 U.S.C. § 6982 (1976) [hereinafter RCRA].

⁴ *Id.* at §§ 8002(n)(5)-(6).

⁵ *Id.* at §§ 8002(n)(1), (2) and (8) are all relevant to designing a baseline for a cost-benefit analysis. RCRA § 8002(n)(4) is relevant to determining the costs in the baseline. RCRA § 8002(n)(7) contains ancillary costs and benefits of the rule.

⁶ For example, the 1993 Bevill Regulatory Determination declined to regulate CCRs from coal-fired electric utilities under Subtitle C because of “limited risks. . . and the existence of generally adequate State and Federal regulatory programs.” 58 Fed. Reg. 42,466. Of course, this could be reformulated to be a claim about the net benefits of Subtitle C regulation.

agency interpretation of an ambiguous term, regardless of whether it is the “best” or “most reasonable” interpretation.⁷ So long as the reinterpretation is neither arbitrary nor capricious, it is perfectly acceptable for EPA to issue another reasonable interpretation of the relevant sections of RCRA.⁸

Administration Policy Requires EPA to Pursue Welfare-Maximizing Regulations

Given the rationales for public regulation of private entities and the directives of Executive Order 12,866, EPA should interpret RCRA to allow the regulation of CCRs under Subtitle C if such regulations would maximize net benefits.

Typically, entities will not voluntarily reduce the expected damages from improper disposal of CCRs because they do not pay the full costs of those damages. Harm to the environment and public health from CCR disposal is a classic “negative externality”: the harmful effects are mostly felt by members of the public who cannot directly influence the production of that pollution. Basic micro-economics holds that when an entity does not pay for an effect it produces, its optimal behavior will not take that effect into consideration. In the status quo, generators of CCRs do not pay for the full effect of their disposal.⁹ Because there are costs (both health effects and environmental effects) from the improper storage of CCRs and regulated entities are not paying for these costs, these entities are not taking sufficient precautions against harmful effects to the public.

The existence of a negative externality does not necessarily dictate that all potential harm from CCR disposal must be eliminated. Rather, society should be willing to pay for any change which produces higher benefits than costs. The costs of regulating CCRs will be passed from regulated sources to society as a whole in a variety of ways. Consumers may face higher prices as the cost of production rises; business owners and investors may lose income as regulated entities lose profits. A wide variety of benefits will counteract these costs, including avoided cancer risks and avoided environmental damage. If the benefits of the proposed rule are higher than the costs, society as a whole is better off.

The goal of maximizing net benefits is enshrined in administration-wide policy under Executive Order 12,866. The Order directs federal agencies to “assess all costs and benefits of available regulatory alternatives” in deciding how to regulate, and then “select those approaches that maximize net benefits. . . unless a statute requires another regulatory approach.”¹⁰ Since, as demonstrated above, EPA has statutory authority to consider net social benefits under the relevant sections of RCRA, the directives of Executive Order 12,866 apply. Because of this, EPA should clearly state that one of its “guiding principles”¹¹ in making its ultimate regulatory decision will be maximizing net social benefits.

⁷ *Chevron U.S.A. Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 843-844 (1984).

⁸ *See Nat'l Cable & Telecomm. Assoc. v. Brand X Internet Servs.*, 545 U.S. 967 (2005) (explaining that *Chevron* review applies to agency changes of legal interpretations, quoting *Chevron*, 467 U.S. at 865-66); *id.* at 981-82 (Rehnquist, J., concurrent in part, dissent in part) (explaining that changes in administration are legitimate grounds for changing agency interpretations).

⁹ For example, TVA has estimated that it will end up paying approximately \$1 billion in cleanup costs for the catastrophic spill in Kingston, Tennessee in 2008. However, this is only one-third of the total social cost that EPA has estimated for the spill. *See REGULATORY IMPACT ANALYSIS FOR EPA'S PROPOSED RCRA REGULATION OF COAL COMBUSTION RESIDUES (CCR) GENERATED BY THE ELECTRIC UTILITY INDUSTRY*, at Appendix Q, p.443 (2010) [hereinafter RIA].

¹⁰ Exec. Order No. 12,866 §1, 58 Fed. Reg. 51,735 (1993).

¹¹ *See Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals From Electric Utilities*, 75 Fed. Reg. 35,128, 35,133 (proposed June 21, 2010). The other two guiding principles that EPA has identified are protection of “human health and the environment” and “sound science.” *Id.*

II. Proper Consideration of Costs and Benefits Should Indicate that Regulation under Subtitle C Maximizes Net Social Benefits

In the Regulatory Impact Analysis (“RIA”) that accompanies the proposed rule, EPA consistently underestimates the benefits of both regulatory options and overemphasizes a hypothetical worst-case scenario asserted by industry stakeholders. The presentation of the worst-case “stigma” scenario for beneficial uses of CCRs as equally likely as an economically rational “base case” projection of beneficial uses is misleading at the very best.¹² EPA should consider a range of administrative or legal steps to minimize the chances of unwarranted “stigma” effects. The agency should also be able to quantify additional categories of health and environmental benefits, and should ensure that any unquantified categories of benefits are fully considered in the final decision. If EPA properly resolves all of these issues, it should be apparent that regulation of CCRs under Subtitle C will maximize net societal benefits. Given EPA’s statutory authority and administration directives (discussed *supra* at pp. 2-4), EPA has a principled basis for regulating CCRs as a special waste under Subtitle C of RCRA.

The Presentation of the “Stigma” Scenario for Beneficial Uses is Unjustified and Misleading

Several groups of stakeholders (notably states, the electric utility industry, and companies that beneficially use CCRs) have argued to EPA that any action to regulate any portion of CCRs under Subtitle C would stigmatize the use of CCRs in the eyes of consumers (and other end users).¹³ This “stigma” would allegedly lead to a decrease in demand for beneficial uses of CCRs.¹⁴ Analogously, commenters have argued that any change in the regulatory status of CCRs would also deter businesses from reusing CCRs because of litigation risks.¹⁵ In order to address these concerns, the RIA has evaluated a “stigma” scenario.¹⁶ The reported effect of the “stigma” scenario is a present value of \$234 billion in social *costs* from the reduction of beneficial uses.¹⁷ By contrast, the “base case” scenario, where beneficial uses increase as a result of higher disposal costs, leads to a present value of \$84 billion in social *benefits*.¹⁸ EPA also uses a “no effect” scenario where there are no changes in beneficial use as a result of regulation.

In the RIA, the agency very explicitly makes the case that the “stigma” scenario is extraordinarily unlikely to happen. It lists six concrete examples of substances classified as “hazardous waste” under RCRA that are not stigmatized in the marketplace. To address concerns about the effect of state laws on beneficial uses, EPA is taking two steps: (1) electing to designate CCRs as a “special waste” subject to Subtitle C regulation and not as a “hazardous waste,” and (2) continuing to exempt beneficial uses of CCRs from regulation under Subtitle C. The one concrete negative reaction to Subtitle C regulation was by a standard-setting organization, ASTM.¹⁹ However, the December 2009 letter from ASTM to EPA did not say that the organization would remove fly ash from their specifications for concrete; a June 2010 letter from ASTM to the agency clarified that a

¹² Letter from Inst. for Policy Integrity to Alexander Livnat, Steve Souders, and Michael Fitzpatrick (June 4, 2010), available at http://policyintegrity.org/documents/Letter_100604.pdf (clarifying the net benefits of the pre-publication Coal Combustion Residuals Rule).

¹³ 75 Fed. Reg. at 35,186.

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ RIA, *supra* note 9, at 175.

¹⁷ *Id.* at 188.

¹⁸ *Id.*

¹⁹ *Id.* at 158.

“hazardous waste” designation for CCRs would merely require a revision to reflect the new classification.²⁰ Still, the agency evaluates the stigma scenario as a “worst case” possibility.²¹

Conversely, the agency believes that the “base case” scenario is most likely to happen. This scenario is based on rational economics: higher disposal costs for CCRs will increase the incentives for beneficial uses. Consistent with the economic theory, “it has been EPA’s experience in developing and implementing RCRA regulation and elsewhere that material inevitably flows to less regulated applications.”²² For these reasons, the RIA describes the “base case” scenario as the “most likely outcome.”²³ The “base case” scenario was evaluated in such a way that it represents the “lower-bound estimate of the potential increase that it anticipates will occur.”²⁴

Unfortunately, EPA foregoes a sensible evaluation of the relative likelihoods of these scenarios in many sections of the preamble and RIA. Table 1 of the preamble presents the two scenarios as upper and lower bounds without appropriate explanation.²⁵ Tables 10, 11, and 12 of the preamble list the net benefits of all three beneficial use scenarios with no context.²⁶ The text of the preamble often displays a false equivalence between the two scenarios.²⁷ Summary Exhibits 5, 6, and 7 in the RIA also display the costs and benefits of all three beneficial use scenarios without any context.²⁸ Chapter 6 of the RIA displays numerous tables on the costs and benefits of all three scenarios but contains no information whatsoever on the likelihood of each scenario.²⁹

More generally, the range of outcomes calculated by EPA extends from a conservative estimate of the most likely scenario to an extreme worst-case scenario. In other words, the range displays two values from the lower half of an appropriate distribution of outcomes: one outcome slightly below the expected outcome and another at the extreme floor of the distribution. This is an unacceptable practice. Guidance from both OIRA and EPA on proper economic analysis cautions against such unqualified presentation of uncertain outcomes and against the unbalanced use of worst-case scenarios.³⁰ Presenting only one extreme of the distribution is likely to bias decisionmakers and

²⁰ Comment from ASTM International to EPA, Hazardous Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities Docket (June 26, 2010), *available at* <http://www.regulations.gov/search/Regs/home.html#home> (Docket ID No. EPA-HQRCRA-2009-0640).

²¹ RIA, *supra* note 9, at 176. The RIA assumes a 50% reduction in all private beneficial uses of CCRs.

²² 75 Fed. Reg. at 35,186.

²³ RIA, *supra* note 9, at 182.

²⁴ 75 Fed. Reg. at 35,219.

²⁵ *Id.* at 35,134. The only indication of probabilities on that page is a statement in the text that “While each of these three scenario outcomes may be possible, EPA’s experience with the RCRA program indicates that industrial generators of RCRA-regulated wastes are often able to increase recycling and materials recovery rates after a subtitle C regulation.” *Id.* The corrected version of Table 1 is located at 75 Fed. Reg. 51,435.

²⁶ 75 Fed. Reg. at 35,215-217 (describing the three scenarios and explaining that “On the basis of past experience, EPA believes that it is likely that recycling rates will increase as presented in the first [increased beneficial use] scenario”).

²⁷ *E.g., id.* at 35,132 (“For example, in considering the alternatives to current disposal methods, some claim that RCRA subtitle C would significantly lessen beneficial use while . . . others see beneficial use expanding as disposal becomes more costly. . .”).

²⁸ RIA, *supra* note 9, at 10-12.

²⁹ *Id.* at 191-203.

³⁰ See OFFICE OF MGMT. & BUDGET, EXECUTIVE OFFICE OF THE PRESIDENT, CIRCULAR A-4, at 40 (2003), *available at* http://www.whitehouse.gov/omb/circulars_a004_a-4/ (explaining that for rules with impacts of over a billion dollars, quantitative analysis should be applied to uncertainties, in particular the use of probability distributions and central estimates); *id.* (cautioning against creating a false sense of precision); *id.* (“worst-case or conservative analyses are not usually adequate because they do not convey the complete probability distribution of outcomes, and they do not permit calculation of an expected value of net benefits”); *see also* EPA, GUIDELINES FOR THE PREPARATION OF ECONOMIC ANALYSIS 27 (2000) (on the treatment of uncertainty).

mislead other interested parties. Instead, guidance instructs agencies to give preference to the most plausible values, to present primary estimates along with minimum and maximum values, and to apply quantitative analysis to uncertain outcomes, using probability distributions with estimates of central tendency.³¹ To this end, EPA should always clearly present the expected value of all possible outcomes in order to provide an unbiased estimate. In this case, such an expected value would likely include two effects that EPA has not included in its estimates: innovation effects and increased usability from utilities switching from wet disposal to dry disposal.³² Similarly, if EPA would like to consider a worst-case outcome such as the “stigma” scenario, the agency should construct an analogous best-case scenario to balance the presentation.

Additional Steps EPA Can Take With Respect to “Stigma”

There are two additional steps that EPA should take with respect to the “stigma” phenomenon. Litigation costs from potentially adverse effects of beneficial uses can be explicitly modeled as a part of the “base case” scenario, and EPA should consider taking additional administrative and legal steps to ensure that unjustified “stigma” effects are not observed from any regulatory decision.

First, EPA could explicitly model possible litigation costs (including legal fees, settlements and damages awarded by juries). It is likely that these costs would only cut into a small fraction of the total private benefits gained from beneficial uses. However, this can be a part of the “base case” scenario by including these costs as an offset to the increased costs of disposal to CCR generators.

Second, EPA should study and definitively establish the risks of individual beneficial uses. If a given use is safe, public knowledge of this fact should help mitigate any irrational consumer decisions. Furthermore, an EPA finding that an individual beneficial use is safe would be powerful protection against unwarranted litigation. EPA could also consider other ways to minimize the costs of litigation if “stigma” and the threat of liability to businesses that use CCRs in products actually present a real concern.

EPA Should Quantify Additional Categories of Health Benefits

The only category of human health benefits quantified in the RIA is cancer from arsenic exposure.³³ While the available data and studies may be most robust for arsenic exposure, EPA should attempt to quantify additional categories of health benefits even if there are not full human health exposure models for the other toxic chemicals that are known to leach from CCRs. The Policy Integrity report, “No More Excuses,” was able to make rough estimates of these benefits for nine additional chemicals by using the literature on willingness-to-pay to avoid exposure and population density measured at the county level from the census bureau.³⁴ While not a substitute for a full exposure model, this procedure provides a sense of the magnitude of the benefits of reducing exposure to these chemicals. In short, even a rough estimate is better than completely excluding these important health benefits from the quantitative analysis (which essentially treats them as being worth zero dollars), and EPA should do the best it can to include credible estimates of these benefits in the final Regulatory Impact Analysis.

³¹ CIRCULAR A-4, *supra* note 30, at 40; GUIDELINES FOR THE PREPARATION OF ECONOMIC ANALYSIS, *supra* note 30, at 27 (recommending the use of the “most plausible values”); EPA, DRAFT OF 2008 UPDATE TO GUIDELINES FOR THE PREPARATION OF ECONOMIC ANALYSIS 10-5 (2008) (recommending, based on OMB guidance, presenting “primary estimates” along with minimum and maximum values).

³² See RIA, *supra* note 9, at 174.

³³ *Id.* at 111.

³⁴ J. Scott Holladay, *No More Excuses: The Economic Case for Coal Ash Regulation* (Institute for Policy Integrity Brief No. 3, June 2009), available at <http://policyintegrity.org/publications/detail/no-more-excuses/> (containing preliminary estimates for antimony, boron, cadmium, cobalt, lead, molybdenum, nitrate, selenium, and thallium).

Unquantified Benefits Should Impact Decisionmaking

To the extent that EPA cannot quantify categories of benefits, it should ensure that the cumulative weight of these effects has a real impact on the final determination. EPA recognizes that the unquantified benefits are higher under Subtitle C regulation.³⁵ Any evaluation of net benefits should accordingly weigh in favor of selecting Subtitle C.

In addition to the health benefits mentioned above, EPA recognizes several categories of environmental and public health impacts that have not been quantified in its analysis: impacts on plants and wildlife, other impacts on surface water, impacts on ambient air, and non-cancer health effects associated with CCR particulate matter.³⁶ EPA also acknowledges several categories of unquantified social benefits from increased beneficial use of CCRs: reduced mercury emissions, lead emissions, waterborne wastes, and solid wastes.³⁷ EPA should also consider the value of habitat and space conserved as a result of needing to build fewer landfills. Though monetization can be difficult, the value of these important categories of benefits is almost certainly not zero, and EPA should do more to emphasize the presentation of these unquantified benefits and should ensure their consideration has a real impact on the design and selection of the final rule.

Proper Cost-Benefit Analysis Should Indicate that Regulation under Subtitle C Will Maximize Net Benefits

Table 1 shows the present value of net social benefits for the two proposed regulatory alternatives for the “base case” beneficial use scenario under all three failure cost scenarios and under two discount rates.³⁸ As discussed above (*supra* pp. 5-7), the “stigma” scenario is an exceedingly unlikely, worst-case hypothetical and, as a result, is not relevant to the decision between the two options.

Table 1. Net Social Benefits of Proposed Alternatives (Present Value in Millions of 2009\$)

	Subtitle C		Subtitle D	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
Extrapolated from Recent Failure Cases	\$117,503	\$66,872	\$47,235	\$26,869
10% Future Failures	\$127,425	\$73,476	\$51,747	\$29,871
20% Future Failures	\$140,471	\$81,842	\$57,665	\$33,666

In all of these cases, the net societal benefits from regulation are significantly positive. In every scenario, the net benefits of regulation under Subtitle C are much higher than the net benefits of Subtitle D regulations. This is without considering the several ways in which EPA is underestimating the health and environmental benefits of the proposed rules. As discussed above, the unquantified benefits of the rule (including the two unquantified effects that would further incentivize an increase in beneficial use) are higher for the proposed Subtitle C regulations than for the proposed Subtitle D regulations. Given the statutory and policy considerations above, EPA should finalize the proposed Subtitle C regulations in order to maximize net societal benefits.

³⁵ RIA, *supra* note 9, at 192.

³⁶ 75 Fed. Reg. at 35,219-220.

³⁷ RIA, *supra* note 9, at 156.

³⁸ *Id.* at 192-193. When estimating failure rates, EPA should ensure it is sufficiently accounting for the aging of surface impoundments.

III. Other Analytical Issues

EPA should perform a more thorough and fine-grained environmental justice analysis. EPA should also analyze other reasonable alternatives, including a full consideration of the costs and benefits of the “Hybrid C & D” option discussed in late 2009 but not included in the RIA that accompanied the proposed rule. The agency should also be more forthcoming about the calculation of climate benefits in the final RIA, to ensure that its analysis is consistent with the recommendations of the interagency process on the social cost of carbon.

The Environmental Justice Analysis Should Be More Thorough and Detailed

Executive Order 12,898 outlines steps to address environmental justice. The Order mandates that agencies identify and address “disproportionately high and adverse human health or environmental effects . . . on minority populations and low-income populations.”³⁹ Additionally, it requires federal agencies to “collect, maintain and analyze information on the race, national origin, [and] income level . . . for areas surrounding facilities or sites expected to have a substantial environmental, human health, or economic effect on the surrounding populations.”⁴⁰

EPA has performed an environmental justice analysis as a part of its RIA. This analysis compares the demographic percentages in Zip Code Tabulation Areas (“ZCTAs”) that contain coal-fired electric utility plants with the percentages of the same populations in a given state and across the country.⁴¹ EPA uses both plant-by-plant data and data that aggregates the ZCTAs containing coal-fired power plants (both by state and nationally). All data is from the 2000 Census.⁴² The analysis concludes that the proposed rule “may have a disproportionately lower effect on minority populations and may have a disproportionately higher effect on low-income populations,” because minorities are not disproportionately located near these utility plants.⁴³

The “Minority” Category Should Include Hispanics and Latinos, and Be Broken Down By Race

EPA compares populations in white and non-white terms. This analysis is flawed: Latinos can be of any race. As noted in the RIA, 75.1% of Americans identified as “White” in the 2000 census; 24.9% of Americans identified as another race or a combination of two or more races.⁴⁴ However, census data also indicates that only 69.1% of Americans are “White alone,” meaning that these people identified as “White” and not as “Hispanic or Latino.”⁴⁵ The result is that EPA has excluded from its impact analysis the 6% of the population who identify as both “White” and “Hispanic or Latino.”

Not only does this inaccurate categorization have the possibility of significantly skewing the analysis, it is inconsistent with EPA’s environmental justice assessments practices.⁴⁶ In EPA’s *Toolkit for Assessing Potential Allegations of Environmental Injustice* (“Toolkit”), EPA defines

³⁹ Exec. Order No. 12,898 § 1-101, 59 Fed. Reg. 7629 (1994).

⁴⁰ *Id.* at § 3-305(b).

⁴¹ RIA, *supra* note 9, at 224-26.

⁴² Except for statewide percentages of low-income residents, which are Census Bureau averages from 1998 to 2000. *Id.* at 217.

⁴³ *Id.* at 226.

⁴⁴ 2000 Census of Population and Housing: Profiles of General Demographic Characteristics, *available at* http://www2.census.gov/census_2000/datasets/demographic_profile/0_United_States/2kh00.pdf.

⁴⁵ *Id.*

⁴⁶ EPA, OFFICE OF ENVTL. JUSTICE, TOOLKIT FOR ASSESSING POTENTIAL ALLEGATIONS OF ENVIRONMENTAL INJUSTICE 16-17 (2004), *available at* <http://www.epa.gov/environmentaljustice/resources/policy/ej-toolkit.pdf>.

Hispanic as “a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, *regardless* of race.”⁴⁷

Additionally, by grouping all non-white races into one “minority” category, EPA’s analysis fails to take into account whether power plants disproportionately affect particular races, as opposed to minorities as whole. In other words, individual racial subgroups may be disproportionately affected even when, in the aggregate, they appear not to be.⁴⁸ EPA’s *Toolkit* states “Given that one of the goals of Executive Order 12898 is to protect minority populations from disproportionate environmental stressors, it is important to determine the race and ethnic composition of the community in question, as well as collect other general demographic information such as age and gender distribution.”⁴⁹

EPA Should Account for Populations Living Near Offsite Disposal Facilities

EPA’s RIA examines whether environmental justice communities surrounding the polluting plants are disproportionately affected by “existing hazards associated with CCR disposal at electric utility plants.”⁵⁰ However, EPA fails to account for how the disposal of CCRs at *offsite* plants affects those populations. EPA’s analysis should consider offsite plant populations.

EPA found that the proposed rule may have a higher disproportionate effect on low-income populations since they live, at a disproportional rate, near utility plants.⁵¹ Because disposal facilities and landfills are normally located in undesirable locations and on low-value land, living near them becomes an affordable option for low-income communities.⁵² Therefore, it is likely that in addition to this rule benefiting those living near utility plants, it will also benefit environmental justice communities who live near offsite disposal facilities. EPA should account for this benefit: the agency should analyze whatever data currently is available on populations near offsite disposal

⁴⁷ *Id.* (emphasis added).

⁴⁸ For example, Abt Associates, Inc. prepared a report for EPA on Methodology for Distributional Benefit Analysis of a National Air Quality Rule in 2009. The report states that Asian American adults experienced 20 percent more particulate matter reduction from the Heavy Duty Diesel Rule compared to the total population, while Native Americans benefited less than the population as a whole. Ellen Post et al., *Methodology for Distributional Benefit Analysis of a National Air Quality Rule*, 24 (2009), available at [http://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0520-01.pdf/\\$file/EE-0520-01.pdf](http://yosemite.epa.gov/ee/epa/erm.nsf/vwAN/EE-0520-01.pdf/$file/EE-0520-01.pdf). Abt Associates advised that a “pseudo-individual-based method . . . is best suited [to answering the question why there are differences in the levels to which different groups are exposed] . . . because it effectively considers all members of each subgroup and tallies results within subgroups (as opposed to, e.g., comparing “minority communities” which also contain whites, with “white communities” which also contain minorities).” *Id.* at 36.

⁴⁹ *TOOLKIT*, *supra* note 46, at 44.

⁵⁰ 75 Fed. Reg. at 35,186.

⁵¹ RIA, *supra* note 9, at 226.

⁵² See Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics?*, 103 YALE L.J. 1383, 1406 (1994) (“Significant evidence suggests that [Locally Undesirable Land Uses] are disproportionately located in neighborhoods that are now home to more of the nation’s people of color and poor than other neighborhoods. Efforts to address that disparity are hampered, however, by the lack of data about which came first—the people of color and poor or the LULU.”). See also Pamela Davidson and Dougals L. Anderton, *Demographics of Dumping II: A National Environmental Equity Survey and the Distribution of Hazardous Materials Handlers*, 37 DEMOGRAPHY 461, 463-64 (November 2000) (While populations living in tracts with treatment, storage, and disposal of hazardous waste facilities (RCRA facilities) “may be described as working-class neighborhoods” with lower percentages of black and Latino residents, tracts within three miles of RCRA facilities “contain a notably higher percentage of black residents, Hispanics, and low-income families than do those with RCRA facilities.”). See Paul Mohai et al., *Environmental Justice*, in 34 ANNU. REV. ENVIRON. RESOUR. 405 (2009) (reviewing of two decades of scholars’ environmental justice claims). For a classic analysis of the relationship between toxic waste sites and race, see Robert D. Bullard, et al., *Toxic Wastes and Race at Twenty 1987-2007: A Report Prepared for the United Church of Christ Justice & Witness Ministries, The United Church of Christ Comm. for Racial Justice* (2007), available at <http://www.ejrc.cau.edu/TWART%20Final.pdf>.

facilities, should collect and study such data in the future, and should consider how reasonably anticipated impacts to the environmental justice communities living near offsite disposal facilities might inform the choice between the Subtitle C regulatory proposal and other policy options.

EPA Should Compare ZCTAs to the Smallest Available Geographic Location

EPA's analysis compares the percentages of relevant populations in ZCTAs that contain coal-fired electric utility plants with percentages of the same populations in a given state and across the country.⁵³ But zip code data may not be the best way to define the relevant areas. A disposal site or plant could be located on the edge of a zip code; proximity to the hazardous sites would be a stronger unit of analysis. Additionally, the demographics within a ZCTA should be compared to the smallest available geographic location (such as a county) rather than state or national averages, to account for heterogeneity in minority population density at the state or national level. In other words, races are not evenly distributed across the United States: they live in cultural enclaves,⁵⁴ and comparing ZCTAs data to state or national statistics may result in biased results.

EPA Should Analyze Other Reasonable Alternatives

The preamble notes that EPA considered a range of hybrid options where surface impoundments of CCRs (i.e., wet disposal) would be regulated under Subtitle C of RCRA but dry CCR disposal would be regulated under Subtitle D of RCRA.⁵⁵ In particular, EPA originally considered an option named "Hybrid C & D." A full cost analysis of this option was done for an OMB Review Draft of the Regulatory Impact Analysis.⁵⁶

This option should have been fully analyzed in the RIA and presented in the preamble for the proposed rule. OMB Circular A-4 recommends that agencies should "examine the benefits and costs of reasonable alternatives that reflect the range of the agency's statutory discretion."⁵⁷ EPA and OMB have not explained the failure to present a mostly completed analysis of a regulatory option that is not clearly contrary to the statute.⁵⁸ In an instance like this, where the agency has already done a substantial amount of work to analyze the costs of the "Hybrid C & D" option, it should have completed a full analysis and presented it in the RIA. Even at this point, EPA should finish this analysis and present it in the final RIA.

EPA could also consider other reasonable alternatives, such as whether a more stringent version of its proposed Subtitle C regulations would be economically justified. Such options could include a faster phase out of wet surface impoundments, a narrower definition of beneficial use, more stringent land disposal requirements, or other options that may be suggested during public comments.

⁵³ RIA, *supra* note 9, at 224-26.

⁵⁴ John Iceland et al. *Racial and Ethnic Residential Segregation in the United States: 1980-2000*, CENSUS 200 SPECIAL REPORTS, 3-4, available at http://www.census.gov/hhes/www/housing/housing_patterns/pdf/censr-3.pdf (finding that while residential segregation for blacks has decreased between 1980 and 2000, they are still the highest segregated group; Latinos are generally the next most highly segregated).

⁵⁵ 75 Fed. Reg. at 35,220.

⁵⁶ REGULATORY IMPACT ANALYSIS FOR EPA'S PROPOSED REGULATION OF COAL COMBUSTION RESIDUES GENERATED BY THE ELECTRIC UTILITY INDUSTRY (OMB Review Draft, Prepared for EPA, Oct. 2009).

⁵⁷ CIRCULAR A-4, *supra* note 30, at 7.

⁵⁸ OMB Circular A-4 does note that information about the costs and benefits of a regulatory option that is contrary to the statute may still be helpful to Congress. *Id.* at 17.

The Social Cost of Carbon Must Be Properly Selected and Discounted in the Final RIA

The RIA accompanying the proposed rule states that it used an interim social cost of carbon (“SCC”) from the light vehicle CAFE/GHG rulemaking.⁵⁹ The median value for the 2007 SCC was updated from 2007 dollars to 2009 dollars. The RIA does not state if the SCC was properly adjusted for the 3% real escalation rate.⁶⁰

The RIA explains that EPA “intends to use the final SCC values for the CCR final rule RIA.”⁶¹ The final analysis must ensure that the SCC is used correctly. In addition to escalating the SCC over time to account for the growth rate, EPA must ensure that damages from future emissions are discounted correctly. As the document describing the interagency process explains, climate damages must be discounted “at the same rate as that used to calculate the SCC estimates themselves to ensure internal consistency.”⁶²

While the interagency process developed four separate trajectories for the SCC, there is no guidance on how to select a particular trajectory for a given regulatory scenario. Given the significant inter-generational impacts implicated in the context of climate change, EPA should select the lowest appropriate discount rate for the calculation of benefits from reducing greenhouse gas emissions.⁶³

IV. Recommendations for Further EPA Actions Related to CCRs

Following this rulemaking, EPA must act to regulate disposal of CCRs in minefilling operations as soon as possible. This is a significant omission in both proposed regulatory schemes. Additionally, if EPA chooses to regulate CCRs under Subtitle D, it should implement a well-designed financial assurance program.

EPA and OSM Must Act Promptly to Regulate Disposal of CCRs in Minefilling Operations

Disposal of CCRs in minefilling operations is not contemplated under either of the proposed rules.⁶⁴ In March 2009, a number of environmental and citizens’ groups sent a letter to the agency (following up on a previous petition for a rulemaking) which argued that:

Unsafe practices should not be sheltered under so-called “beneficial use” exemptions. In particular, the use of coal ash to “reclaim” surface or underground mines, including abandoned mines, should be subject to the same stringent standards to prevent offsite contamination that apply to land disposal facilities. As recommended by the National Research Council, the characteristics of both coal combustion waste and potential reclamation sites should be evaluated to determine whether minefilling is suitable for specific locations. EPA, in consultation with the Office of Surface Mining, should promulgate enforceable federal regulations governing the disposal of coal ash in mines.⁶⁵

⁵⁹ RIA, *supra* note 9, at 156 (note the citation to 74 Fed. Reg. 29,617 is incorrect; the correct citation is 74 Fed. Reg. 49,617).

⁶⁰ The interim social cost of carbon used a 3% real escalation rate. 74 Fed. Reg. 49,617.

⁶¹ RIA, *supra* note 9, at 156.

⁶² INTERAGENCY WORKING GROUP ON THE SOCIAL COST OF CARBON, SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12,866 at 29 (2010).

⁶³ See Comments from Inst. for Policy Integrity & Env'tl. Defense Fund, to EPA on Proposed Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emission Standards (Nov. 27, 2009) (submitted to Docket ID No. EPA-HQ-OAR-2009-0472), available at http://policyintegrity.org/documents/SCC_Comments_EPAFINAL.pdf.

⁶⁴ 75 Fed. Reg. at 35,165.

⁶⁵ Petition from Env'tl. Integrity Project et al., to EPA on Coal Combustion Waste, Mar. 2, 2009, at p.3.

The agency is deferring its response to the petitioners on this issue. The preamble explains that EPA “will work with OSM [Office of Surface Mining Reclamation and Enforcement, U.S. Department of the Interior] to address the management of CCRs in minefills in a separate rulemaking action.”⁶⁶ While this describes a reasonable course of action, it is apparent the failure to address this problem has been a lack of urgency on the part of the relevant agencies. The National Research Council published its report “Managing Coal Combustion Residues in Mines” nearly five years ago, and no action has been taken since then.⁶⁷ EPA and OSM should use this rulemaking to motivate the regulation of disposal of CCRs in minefilling operations. Failure to issue appropriate minefilling regulations would be a major omission in any scheme to regulate the disposal of CCRs (under either Subtitle C or Subtitle D). While the National Research Council recommended that OSM take the lead in developing minefilling regulations, EPA should consider what its options are for independent action if OSM does not act promptly.

If EPA Elects to Regulate CCRs under Subtitle D, a Well-Designed Financial Assurance Option Must Be Implemented

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (“CERCLA”) allows EPA to require facilities to “establish and maintain evidence of financial responsibility consistent with the degree and duration of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances.”⁶⁸ The preamble “solicits comments on whether financial assurance [under CERCLA] should be a key program element under a subtitle D approach, if the decision is made to promulgate regulations under RCRA subtitle D.”⁶⁹

While all evidence points to Subtitle C as the more appropriate vehicle for regulating CCRs, if the agency instead elects to use Subtitle D, EPA should then design and implement a financial assurance program under CERCLA. As noted in the preamble, this process has already been started by the advanced notice of proposed rulemaking on “Identification of Additional Classes of Facilities for Development of Financial Responsibility Requirements Under CERCLA Section 108(b).”⁷⁰ While likely inferior to regulation under Subtitle C (which comes along with its own financial assurance requirements), financial assurance is one way to ensure that regulated entities take appropriate actions under Subtitle D. Liability for the full social costs of an adverse event is an alternative method for ensuring that the external costs are taken into account by the entities that are creating the risk.⁷¹ This comes up most often in the context of tort law. Professors Polinsky and Shavell identify three potential benefits of liability: inducing firms to increase safety, improving economic decision-making by causing prices to reflect risks, and compensating victims for their losses.⁷² In theory, this method can achieve the same results as a regulation which maximizes net social benefits. However, one real-life flaw in this theory is that any private party who cannot pay for the full magnitude of the harm will not take adequate steps to mitigate overall risks.⁷³ This will occur whenever the potential liability of a party is higher than the assets of a party.⁷⁴ A well-designed financial assurance program is one way of guaranteeing that this will not occur.

⁶⁶ 75 Fed. Reg. at 35,143.

⁶⁷ NATIONAL ACADEMY OF SCIENCES, MANAGING COAL COMBUSTION RESIDUES IN MINES (2006).

⁶⁸ 42 U.S.C. § 9608(b)(1).

⁶⁹ 75 Fed. Reg. at 35,224.

⁷⁰ 75 Fed. Reg. 816.

⁷¹ See, e.g., A. Mitchell Polinsky & Steven Shavell, *The Uneasy Case for Product Liability*, 123 HARV. L. REV. 1437 (2010).

⁷² *Id.* at 1438.

⁷³ Steven Shavell, *Liability for Harm Versus Regulation of Safety*, 13 J. LEGAL STUD. 357, 360 (1984).

⁷⁴ *Id.* at 360-61.

However, careful attention should be paid to any regulations on the topic. These regulations should be structured so that the right behavior is incentivized. In particular, EPA needs to avoid a potential moral hazard problem. If regulated entities are protected from future cleanup costs, they may not take appropriate precautions to avoid harmful releases of CCRs.

Conclusion

Overall, the Subtitle C regulatory proposal is the more economically justified policy option. An improved regulatory analysis—including a more balanced approach to the so-called “stigma” scenario, a fuller accounting of other health and environmental benefits, and a more fine-grained environmental justice analysis—should further strengthen the case for that policy choice. EPA should correct any misleading presentation of the “stigma” scenario and should take appropriate actions to minimize any potential for unwarranted “stigma” effects (such as further study of beneficial uses). Then, after assessing reasonable alternatives, EPA should select the regulatory proposal that delivers the highest net societal benefits—in other words, the regulations that will protect the public health and the environment while simultaneously promoting the economic gains from beneficial use of CCRs. Regulation under Subtitle C will deliver these twin benefits.

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