II. EPA's Appropriate and Necessary Determination and Listing Decision For Coal- and Oil-Fired EGUs was Justified in 2000 and is Further Supported by EPA in the Proposed Rule.

A. An Overview of Section 112(n)(1) of the Clean Air Act and its History

As originally enacted in 1970, section 112 required EPA to identify air pollutants that "cause, or contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness," and to establish an emissions standard that "provides an ample margin of safety to protect the public health" for each of these pollutants within one year. Clean Air Act Amendments of 1970, Pub. L. No. 91-604, sec. 112, 84 Stat. 1676, 1685–86 (1970). Between 1970 and 1989, EPA only listed eight substances as hazardous air pollutants (HAPs) under section 112. H.R. Rep. No. 101-490, pt. 1, at 322 (1990).

Unhappy with EPA's ability to effectively regulate HAPs and secure large-scale reductions in the emission of these dangerous substances, Congress restructured section 112 in the Clean Air Act Amendments of 1990. S. Rep. No. 101-228, at 128, 133 (1989), *reprinted in* 1990 U.S.C.C.A.N 3385, 3513, 3518. Congress changed the Act by specifically listing 189 substances as HAPs, 42 U.S.C. § 7412(b)(1) (2006), and requiring those opposed to regulation to bear the burden of proving that a substance does not pose a hazard to public health or the environment, *id.* § 7412(b)(3).

In addition, in the 1990 Amendments, Congress transformed the statutory requirements for HAPs regulation away from a health-based program focused on specific pollutants to a technology-based program focused on the industrial source categories emitting the toxics that Congress specifically listed in the statute. Congress required EPA to list categories of sources containing major sources of the listed HAPs. *Id.* § 7412(c)(1)–(2), (c)(5). For each listed category, EPA must establish emissions standards under section 112(d)(2) and (d)(3). 42 U.S.C. § 7412(d)(2)–(3) ("MACT standards").

MACT standards "require the maximum degree of reduction in emissions . . . [that] is achievable for new or existing sources. . . ." *Id.* § 7412(d)(2). In section 112, for new sources, Congress established a minimum stringency "floor" requirement providing that the degree of emission control that is deemed achievable shall be no less stringent than "the emission control that is achieved in practice by the best controlled similar source . . . ." *Id.* § 7412(d)(3). Floors for existing sources must reflect the "average emission limitation achieved by the best performing 12 percent of existing sources" if the source category includes at least thirty sources, *id.* § 7412(d)(3)(A), and the emission limitation achieved by the best performing five sources if the category includes fewer than thirty sources, *id.* § 7412(d)(3)(B).

The Clean Air Act Amendments of 1990 directed EPA to regulate HAPs from EGUs "under this section"—that is, using the section 112(d)(2) & (3) MACT standards described above— if the Agency found such regulation to be "appropriate and necessary." *Id.* § 7412(n)(1)(A). In section 112(n), Congress required EPA to conduct three studies. Section 112(n)(1)(A) required EPA to perform a study (the "Utility Study") and report to Congress by no later than November 15, 1993 on "the hazards to public health reasonably anticipated to occur as a result of [HAP] emissions by [EGUs] . . . after imposition of the requirements of [the Clean Air Act]." *Id.* Section 112(n)(1)(B) required EPA to examine and report to Congress by no later than November 15, 1994 on the adverse public health and environmental effects posed by mercury emitted from EGUs in combination with other sources (the "Mercury Study"). *Id.* § 7412(n)(1)(B). Additionally, section 112(n)(1)(C) required the National Institute of Environmental Health Sciences to conduct a study, and transmit it to Congress by no later than November 15, 1993 (the "NIEHS Study"), that "determine[s] the threshold level of mercury exposure below which adverse human health effects are not expected to occur." *Id.* § 7412(n)(1)(C).

B. The 2000 Appropriate and Necessary Finding and Listing Decision

In December 2000, after having belatedly completed the required studies and reports to Congress mandated by section 112(n)(1), EPA found that regulation of HAP emissions from EGUs was appropriate and necessary and added coal- and oil-fired EGUs to the list of industries requiring MACT regulation. Regulatory Finding on the Emissions of Hazardous Air Pollutants from Electric Utility Steam Generating Units, 65 Fed. Reg. 79,825, 79,830 (December 20, 2000) ("2000 Finding"). The appropriate and necessary finding was based on the results of all three studies mandated by section 112(n)(1) (*see id.* at 79,826–30 (describing the required studies and their statutory bases)), and data and comments solicited from the public (*see* Electric Utility Steam Generating Units: Solicitation of Additional Information for Making Regulatory Determination, 65 Fed. Reg. 10,783 (Feb. 29, 2000), & Electric Utility Steam Generating Units;
Notice of Public Meeting, 65 Fed. Reg. 18,992 (Apr. 10, 2000)).

The Utility Study examined mercury and non-mercury HAP emission levels from EGUs in 1990, as well as projected emissions levels in 2010 in order to allow for an evaluation "after imposition of the requirements of the Act" as required by section 112(n)(1)(A). 1 U.S. Envtl. Prot. Agency, EPA-453/R-98-004a, Study of Hazardous Air Pollutant Emissions from Electric Utility Steam Generating Units: Final Report to Congress ES-2 (1998) [hereinafter Utility Report], available at http://www.epa.gov/ttncaaa1/t3/reports/eurtc1.pdf. The Utility Study concluded that mercury was the HAP of greatest concern from EGUs, *id.* at ES-27, but that multiple-pathway exposure to arsenic and dioxins also posed a potential concern, *see id.* at 10-42 (finding lifetime cancer risks from arsenic of up to two in ten thousand); *id.* at 11-27 (finding a lifetime cancer risk from dioxins of one in one million and greater). The findings of the Utility Study, released to Congress in February 1998, were subject to scientific peer review. *Id.* at ES-25 to 26.

The Mercury Study required by section 112(n)(1)(B) examined "the magnitude of U.S. mercury emissions by source, the health and environmental

implications of those emissions, and the availability and cost of control technologies." 1 U.S. Envtl. Prot. Agency, EPA-452/R-97-003, Mercury Study: Report to Congress O-1 (1997), available at http://www.epa.gov/ttn/caaa/t3/reports/volume1.pdf. The Mercury Study highlighted the fact that scientific knowledge of mercury and its effect on public health and the environment were still evolving. *Id.* EPA found that EGUs are the largest anthropogenic source of atmospheric mercury in the United States, and that one-third of the mercury emitted from EGUs deposits in the lower forty-eight states. *Id.* at 3-6, table 3-1. The Mercury Study found that there was a plausible link between mercury emitted by EGUs and methylmercury in fish, and that the primary pathway for human exposure to mercury is by eating contaminated fish. *Id.* at 3-19. Dietary methylmercury is almost completely absorbed into the bloodstream and transported throughout the body, including to developing fetuses. *Id.* at 3-23 – 3-24. The health impacts of human exposures, *see* discussion *supra* Part I, were documented and all of these findings were subject to scientific peer review prior to submission to Congress in December 1997. *See id.* at iii-v. The NIEHS study, completed in 2000, had similar findings to the Mercury Study. Nat'l Acad. of Sci., *Toxicological Effects of Methylmercury* (2000).

Having considered the Utility Study as well as other information, EPA acted reasonably—and well within the scope of its statutory authority—in concluding that regulation of EGUs under section 112 was "appropriate and necessary." 65 Fed. Reg. at 79,830. Although EPA did not conclusively link mercury emitted from EGUs to methylmercury in fish, nothing in the Clean Air Act requires EPA to establish any such link. Nor does any statutory language require EPA to make any specific or general health or environmental finding before determining that it is appropriate and necessary to regulate EGU HAPs under sections 112(d)(2) & (3). EPA found that the "appropriate" finding was further supported because numerous control options were available at the time of the finding that would reduce HAP emissions. *Id.*; *see also id.* at 79,828–29 (describing HAP control strategies). That finding is even more true today. The "necessary" finding was bolstered further

because the other requirements of the Clean Air Act did not sufficiently address the hazards to human health and environment caused by HAP emissions. *Id.* at 79,830; *see infra* Part II.D.v.c (discussing the meaning of "other requirements").

The 2000 Finding included a decision to "add[] [EGUs] to the list of source categories under section 112(c)." 65 Fed. Reg. at 79,831. This triggered EPA's obligation to regulate HAP emissions from EGUs using MACT standards. 42 U.S.C. § 7412(c)(2), (c)(5) (requiring that EPA establish "emissions standards under subsection (d) of [Section 112]" for both the initial list of industries and later-listed industrial categories); *see supra*, Part II.A (discussing the MACT standards required by subsection (d)). In 2001, the Utility Air Regulatory Group sought immediate review of the 2000 Finding in court. Because section 112(e)(4) expressly provides that a listing decision is not judicially reviewable until after final emission standards are issued, the court dismissed the case for lack of jurisdiction. *Util. Air Regulatory Grp. v. EPA*, No. 01-0174, 2001 WL 936363 (D.C. Cir. July 26, 2001); *see also* 42 U.S.C. § 7412(e)(4) ("[N]o action . . . listing a source category or subcategory under subsection (c) of this section shall be a final agency action subject to judicial review . . . .)

The 2000 appropriate and necessary finding and listing decision triggered EPA's nondiscretionary duty to regulate HAP emissions from EGUs. In 2001, EPA assembled stakeholders—including states and local agencies, environmental groups, and industry representatives—in the Utility MACT Working Group to engage with the Agency in developing MACT standards. Utility MACT Working Group, Recommendations for the Utility Air Toxics MACT: Final Working Group Report 1–2 (2002), *available at* www.epa.gov/ttnatw01/combust/utiltox/wgfinalreport10_02.pdf. In its final report, delivered to the Clean Air Act Advisory Committee in October of 2002, the Working Group provided recommendations on (1) whether to subcategorize the source category for establishing MACT standards; (2) the appropriate MACT floor levels for mercury; (3) whether to establish a beyond-the-floor MACT for mercury; (4) whether the mercury MACT standard should be an emissions limit or a percent

reduction; (5) the method of monitoring compliance with the mercury standard; (6) the length of compliance time; (7) EPA's authority to regulate non-mercury HAPs; (8) and how to regulate oil-fired EGUs. *Id.* at 4–22. The various stakeholder groups—state and local agency, environmental, and industry—were unable to come to an agreement, and thus each group provided their own recommendations for each of the above-listed issues. *Id.*

Early in 2004, after discontinuing its engagement with the Working Group, EPA proposed to either (1) regulate EGU emissions under proposed new- and existing-source MACT floors, or (2) revise its 2000 Finding and issue performance standards for the industry under section 111 of the Act. Proposed National Emission Standards for Hazardous Air Pollutants; and, in the Alternative, Proposed Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 69 Fed. Reg. 4,652 (proposed January 30, 2004). In the final rule, issued over a year later, EPA purported to "reverse" its appropriate and necessary finding and stated that by so doing, it could simply remove EGUs from section 112(c)'s list of source categories. Revision of December 2000 Regulatory Finding on the Emissions of Hazardous Air Pollutants From Electric Utility Steam Generating Units and the Removal of Coal- and Oil-Fired Electric Utility Steam Generating Units From the Section 112(c) List, 70 Fed. Reg. 15,994 (Mar. 29, 2005) ("2005 Delisting").

The 2005 Delisting claimed that regulation was neither appropriate nor necessary. *Id.* The supposed reversal was based largely on a cramped and narrow interpretation of the phrase "after imposition of the requirements of this Act" found in section 112(n)(1)(A). In 2005, EPA interpreted this phrase irrationally to mean that it is *only* appropriate and necessary to regulate EGUs under section 112 *if* "there are no other authorities available under the CAA that would, if implemented, effectively address the remaining HAP emissions from [EGUs]." *Id.* at 16,001. EPA then asserted its view that, because it was possible to regulate the hazards to human health posed by mercury alone under section 110(a)(2)(D) or section 111 of the Clean Air Act, regulation under section 112 was not necessary. *Id.* at 16,004.

EPA simultaneously finalized an unlawful rule, the Clean Air Mercury Rule (CAMR), governing new and existing EGU sources of mercury under section 111 of the Act that relied upon a "cap-and-trade" system for mercury control from new and existing EGU sources, among other features. Standards of Performance for New and Existing Stationary Sources: Electric Utility Steam Generating Units, 70 Fed. Reg. 28, 606 (May 18, 2005).

States, tribes, and environmental and public health groups challenged EPA's 2005 Delisting rule and CAMR in the D.C. Circuit as unlawful and arbitrary and capricious. *New Jersey v. EPA*, 517 F.3d 574, 582–83 (D.C. Cir. 2008). Although EPA admitted that it had listed EGUs in 2000 and that this listing otherwise would require the agency to set MACT standards for EGUs, the Agency claimed wrongly that it had authority to delist EGUs at any time just by reversing the appropriate and necessary finding and without making the delisting showing required by section 112(c)(9). *Id.* at 580; *see also* 70 Fed. Reg. at 16,032. The D.C. Circuit disagreed. The Court stated that the plain text of section 112(c)(9) "governs the removal of '*any* source category' from the section 112(c)(1) list, and nothing in the [Clean Air Act] exempts EGUs from section 112(c)(9)." *New Jersey v. EPA*, 517 F.3d at 582. Accordingly, the Court held that EPA could not delist EGUs and avoid regulation without first satisfying the requirements of section 112(c)(9). *Id.* Because EPA conceded that it never made the findings required to satisfy Section 112(c)(9), the Court held that the delisting was flatly unlawful and that EGUs remained listed and subject to MACT regulation under section 112(c). *Id.* at 578, 582. The Court then vacated CAMR and the Delisting rule simultaneously, including EPA's unlawful and embedded attempt to "reverse" its appropriate and necessary finding.

C. EPA's 2000 Appropriate and Necessary Decision Needs No Further Support

Section 112(n)(1)(A) of the Clean Air Act directs EPA to "regulate [EGUs] if the Administrator finds such regulation is appropriate and necessary after

considering the results of the study required by this subparagraph." 42 U.S.C. § 7412(n)(1)(A) (emphasis added). The record conclusively shows that EPA did just that: first it considered the study, and then it found that regulating EGUs was appropriate and necessary. Further, EPA fully explained and supported its decision. Nothing further is required by the Clean Air Act or by general principles of administrative law.

D. Additional Information Since 2000 Provides Further Justification for the Appropriate and Necessary Finding

Although no further support was required for EPA's 2000 Finding, EPA reaffirmed its appropriate and necessary finding in a signed proposed rule in March 2011. National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial-Institutional, and Small Industrial-Commercial-Institutional Steam Generating Units, 76 Fed. Reg. 24,976 (May 3, 2011) ("Proposed Rule") (signed March 16, 2011). This reaffirmation was unnecessary; the Agency's 2000 Finding and contemporaneous listing decision were fully supported at the time they were made, as described above. As EPA demonstrates, new studies performed since 2000 provide further support for the decision to regulate HAP emissions from this industry.

Because the Act makes clear that listing a source category is not judicially reviewable until issuance of final section 112 emissions standards (§ 7412(e)(4)), EPA clearly may augment and supplement its original 2000 appropriate and necessary finding with subsequent information, analysis and arguments to support and reaffirm that earlier finding. There is nothing in the Act that freezes in time the appropriate and necessary finding made in 2000, nor is there any prohibition on EPA's ability to supplement and update that finding up until the time that it issues final emissions standards for EGUs. Indeed, the natural reading of sections 112(n)(1)(A) and 112(e)(4) together make clear that the D.C. Circuit will review both

the appropriate and necessary finding and the related listing decision based upon the administrative record associated with issuance of final MACT emissions standards for EGUs.

i. EPA Correctly Interprets Section 112(n)(1)(A) to Allow Consideration of Environmental Effects in Making an Appropriate and Necessary Finding

In the Proposed Rule, EPA states that the statute allows for a finding that it is appropriate to regulate coal- and oil-fired EGUs based on either hazard to public health or the environment. 76 Fed. Reg. at 24,988. Although section 112 certainly allows the agency to find regulating EGUs is appropriate and necessary based on either finding, it does not require a "hazard" finding at all. Rather, it simply provides that EPA must regulate EGUs if, after "considering" the Utility Study, it finds that doing so is appropriate and necessary. Thus, it leaves the agency broad discretion to make the appropriate and necessary finding so long as the agency has reasonably "consider[ed]" the results of the study. EPA could have reasonably concluded that Congress wanted emissions of all listed HAPs reduced by the maximum achievable degree, and thus regulation of EGUs—the most significant emitter of virtually every HAP listed in section 112(b)—is both appropriate and necessary regardless of whether it was possible for the Agency to fully assess all of the risks that toxic emissions from EGUs present. In fact, EPA should reach just this conclusion in its final rule.

Because section 112(n)(1)(A) only requires that EPA assess "the hazards to public health reasonably anticipated to occur" in the Utility Study, EPA's 2005 Delisting Rule asserted (incorrectly) that the Agency was required to base its decision *solely* on public health hazards—and not environmental hazards—posed by HAP. 70 Fed. Reg. at 15,997. However, even where the Clean Air Act provides that EPA's action must be "based on" a study—more limiting language than the "considering" language found in section 112(n)—the Agency is not required to base its action *exclusively* on that study unless Congress has expressly stated so. *See*

Sierra Club v. EPA, 325 F.3d 374, 377 (D.C. Cir. 2003) (holding that section 202(*l*) of the Clean Air Act—which requires the EPA to conduct a "study of the need for, and feasibility of, controlling emissions of toxic air pollutants" and then requires EPA to promulgate standards for mobile source air toxics "based on" that study—does not require that the standards be based *exclusively* on the required study). And nowhere in section 112(n)(1)(A) or elsewhere has Congress expressly stated, or even implied, that EPA must base its appropriate and necessary finding *exclusively* upon the study prescribed in the first sentence of that section.

EPA itself noted in the 2005 Delisting that the requirement to perform and consider the Utility Study does not constrain the Agency from considering facts beyond those contained in the study when determining whether regulation is appropriate and necessary. 70 Fed. Reg. at 15,999. In addition, as EPA discusses in the 2011 Proposed Rule, it is possible that the Utility Study was limited in such a way, "not because Congress was unconcerned with adverse environmental effects or the cumulative impact of HAP emissions, but because the Utility Study, as required, was a significant undertaking in itself and Congress wanted the Agency to complete the study within 3 years." 76 Fed. Reg. at 24,987.

EPA's reliance in the 2011 Proposed Rule on environmental effects as additional support for the finding that it is appropriate to regulate EGUs is further supported by the rest of section 112, which contains many examples of language evincing Congressional concern about the adverse environmental effects of HAPs. For example, EPA can add a substance to the list of HAPs based solely on its adverse environmental effects. 42 U.S.C. § 7412(b)(2)–(3) (authorizing EPA to add a pollutant to the section 112(b) list based on "a threat of adverse human health effects . . . *or* adverse environmental effects . . . .") (emphasis added). Furthermore, an industry may be listed as containing major sources, and sources within that industry thus made subject to MACT regulation, based solely on HAPs that have adverse effects on the environment. *See id.* § 7412(b)(2); *id.* § 7412(a)(1) (defining a major sources as those that emit "10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air

pollutants"); *id.* § 7412 (c)(1)–(2), (c)(5), (d)(3) (requiring EPA to list categories of major sources of HAPs and to establish MACT standards for listed source categories).

Additionally, the subsection immediately following section 112(n)(1)(A) requires EPA to examine the environmental effects of EGU mercury emissions as part of the Mercury Study. *Id.* § 7412(n)(1)(B). It is unreasonable to assume that Congress required EPA to conduct an assessment of mercury's environmental effects, but at the same time forbade the Agency from considering these effects in its subsequent decision-making process. Thus, even though not mandated by the text of section 112(n)(1)(A), the Agency's decision to consider both public health and environmental hazards as a basis for regulating HAP emissions from EGUs is both reasonable and consistent with Congressional purpose, as shown by other provisions in the Clean Air Act.

ii. EPA Correctly Interprets Section 112(n)(1)(A) to Allow for Regulation of EGUs Based upon a Single HAP

In the Proposed Rule, EPA states that the statute requires a finding that it is appropriate to regulate coal- and oil-fired EGUs if "the emissions of *one or more* HAP emitted from EGUs pose an identified or potential hazard to public health or the environment." 76 Fed. Reg. at 24,987 (emphasis added). Again, the statute does not require any "hazard" finding at all, but the Agency would have acted well within its authority had it found regulating EGUs appropriate and necessary based on hazards presented by mercury alone.

There is nothing in the Act prohibiting a finding that EGU mercury emissions alone make it appropriate and necessary to regulate *all* HAPs from EGUs under section 112(d)(2) & (3) – since MACT standards must be adopted for all HAPs emitted by a listed source category, as EGUs are. Nor would it be arbitrary and capricious had EPA determined it was appropriate and necessary to list EGUs based upon mercury emissions alone, considering that the Congressionally-

established, performance-based approach of section 112 has proven effective in reducing mercury and all other HAPs from other industrial source categories; EGUs are the largest remaining uncontrolled sources of industrial mercury emissions in the country; and other statutory programs are less suited toward reducing mercury emissions than section 112(d).

iii. EPA Correctly Considers HAP Emissions Not Only From EGUs But From All Sources in Finding That it is Appropriate to Regulate Coal- and Oil-Fired EGUs Under Section 112(d)

In the Proposed Rule, EPA states that section 112(n)(1)(A) allows for an "appropriate and necessary" finding regardless of whether the hazard posed to public health or the environment results from either HAP emissions from EGUs alone or the harm is in conjunction with HAP emissions from other sources. 76 Fed. Reg. at 24,988. Utility industry representatives have argued in the past that section 112 regulation based on mercury is inappropriate because they assert that only one percent of the global pool of atmospheric mercury is attributable to coal-fired power plants located in the United States. *See, e.g.*, Comments of American Electric Power, Document ID No. EPA-HQ-OAR-2002-0056-3558, at 3 (June 29, 2004) (arguing that, because the industry is only responsible for one percent of global atmospheric mercury, reductions in EGU-attributable emissions will "have no discernible impact on the exposure of sensitive populations to high levels of mercury"). The Agency parroted industry's twisted logic in its unlawful 2005 Delisting. EPA interpreted the phrase "occur as a result of emissions by electric utility steam generating units," 42. U.S.C. § 7412(n)(1)(A), to mean that it should "focus solely on whether the utility HAP emissions themselves are posing a hazard to public health." 70 Fed. Reg. at 15,998. However, this is both an unreasonable interpretation of the statute and inconsistent with case law, as well as a misuse of the science.

In the Proposed Rule, EPA correctly reiterates the understanding of the statute underlying its 2000 finding and listing decision. Specifically, EPA must

take a holistic view of toxic air pollution, including mercury, as it impacts human health and the environment in determining whether to regulate EGUs. As explained above, EPA did not need to make a finding that EGU emissions were a hazard to public health at all. EPA acted well within its statutory authority by concluding that EGUs' contribution to emissions of air toxics makes regulating them under section 112 appropriate and necessary. Further, the remainder of section 112 confirms that Congress did not intend any industrial category to avoid regulation because EPA might not have exacting proof of the harm caused by that category in isolation. It shows that Congress was well aware that the problem presented by air toxics—the problem it enacted section 112 to solve—resulted from emissions from many different source categories.

First, in addition to the requirement to conduct the Utility Study found in section 112(n)(1)(A), section 112(n)(1)(B) explicitly requires EPA to conduct "a study of mercury emissions from electric utility steam generating units, *municipal waste combustion units, and other sources, including area sources*." 42 U.S.C. § 7412(n)(1)(B) (emphasis added). It is highly unlikely that Congress would have required EPA to conduct an assessment of the cumulative effects of these various source categories, but then *prohibited* that assessment from being considered in any decisions regarding regulation of one of them. Certainly there is *no* statutory support for such any such suggested prohibition.

Second, the phrase "result of emissions," used in section 112(n)(1)(A), is also found in section 112(k)(3)(B) with respect to developing a national strategy for area source HAP emissions. Interpreting that language, EPA has said that determining which HAPs pose the greatest threat to human health "as the result of emission from area sources," does *not* require that "such threats must be exclusively the result of emissions from area sources." *See* National Air Toxics Program: The Integrated Urban Strategy, 64 Fed. Reg. 38,706, 38,716 (July 19, 1999).

Third, section 112(c)(3) requires that EPA list for regulation sufficient source categories so that, in the aggregate, ninety percent of emissions for the thirty most hazardous air pollutants are regulated. 42 U.S.C. § 7412(c)(3). This requirement

illustrates that Congress was aware that the cumulative emissions from different industries have cumulative adverse effects on public health and the environment.

In *Massachusetts v. EPA*, 549 U.S. 497, 525 (2007), decided two years after EPA's reversal of the appropriate and necessary finding, the Supreme Court held that regulation of greenhouse gases from motor vehicles is appropriate even if it only addresses a portion of the climate change problem. Similar to industry arguments here, in *Massachusetts*, EPA argued that it was not required to regulate emissions from motor vehicles because such emissions only accounted for six percent of global carbon dioxide emissions. *Id.* at 524. Because regulation of motor vehicle emissions would not eliminate the problem of climate change, EPA believed it was not required to act. *Id.* at 523–24.

The Court strongly disagreed with this argument. It stated that "[a]gencies, like legislatures, do not generally resolve massive problems in one fell regulatory swoop," *id.* at 524, and EPA had a duty to address climate change even if the steps taken only "*slow* or *reduce* it," *id.* at 525 (emphasis in original). Acknowledging that climate change depends on global carbon dioxide emissions, the Court noted that "a reduction in domestic emissions would slow the pace of global emissions increases, no matter what happens elsewhere." *Id.* at 526. After *Massachusetts*, the industry argument that it is not appropriate for EPA to regulate EGU mercury emissions because they allegedly comprise such a small portion of global emissions must fail. Notably, these industry commenters fail to identify any statutory text or legislative history supporting their argument that this alleged global level of U.S. EGU mercury emissions somehow makes it unlawful for EPA to conclude it is appropriate and necessary to regulate EGU HAPs under section 112(d). It is reasonable for EPA to conclude that it must take steps to reduce the hazards that mercury poses to human health and the environment, even if those steps do not or cannot fully solve the problem.

In *Ethyl Corp. v. EPA*, 541 F.2d 1, 29–31 (D.C. Cir. 1976), which involved regulation of lead gasoline additives, the D.C. Circuit took a similar approach to the regulation of lead gasoline additives. The Court explained that "Congress

understood that the body lead burden is caused by multiple sources. It understood that determining the effect of lead automobile emissions, by themselves, on human health is of no . . . practical value"; rather, the cumulative impact approach was the best method for determining public health hazards posed by lead emissions. *Id.* at 30–31. Because lead gasoline additives were the most easily regulated source of lead, regulation was appropriate. *Id.* at 31. The same considerations apply to mercury emissions from EGUs. Though multiple sources contribute to methylmercury in the environment and in fish, EGUs are the largest anthropogenic sources of atmospheric mercury, and thus are more practicable to control than multiple diverse sources. EPA's conclusion that it was appropriate and necessary to regulate EGU HAP emissions under section 112(d) was thus reasonable.

Furthermore, scientific evidence shows that EPA's former interpretation of section 112(n)(1)(A), focusing solely on EGU-attributable emissions, would lead to absurd results in practice. For an effect to be "a result of" an action, the action does not have to be fully and solely responsible for the effect. "[I]f a person climbs into a bathtub filled to the brim, the overflow is 'a result of' both the too-full tub and the person getting in[,]" not—as the 2005 interpretation would claim—neither. NRDC et al., Petition for Reconsideration, Document ID No. EPA-HQ-OAR-2002-0056-6270, at 13 (May 31, 2005). Under the proffered 2005 reading of the statute, EGUs could avoid regulation even if the total emissions of a particular HAP from all sources posed a human health or environmental hazard—as, in the case of mercury, the science demonstrates it does. This would be true, so long as EGUs themselves emitted just below levels required to pose a human health or environmental hazard, even if EGUs contribute the vast majority of the emissions responsible for the problem. *See* Gerald J. Keeler et al., *Sources of Mercury Wet Deposition in Eastern Ohio, USA*, 40 Envtl. Sci. & Tech. 5874, 5880 (2006) (finding that local and regional coal combustion by EGUs was the "dominant influence," accounting for about 70 percent of wet mercury deposition in Steubenville, Ohio). Such a result is inconsistent with the language and purpose of section 112, which specifically seeks near-term reductions and relief from the dangers posed by the listed HAPs.

The technical analyses conducted by the Agency after the 2000 Finding demonstrate that EGUs remain the largest industrial source of mercury in the United States. Mercury emissions from EGUs account for approximately half of U.S. anthropogenic mercury emissions. 76 Fed. Reg. at 25,002 (finding that EGUs emitted fifty-three tons of mercury in 2005, which is comparable to the fifty-two tons emitted by all other anthropogenic sources collectively). Mercury emissions from EGUs are projected to be over six times larger than those from the second largest contributing source by 2016. *Id.* Additionally, the significant fractions of Hg^{+2} and Hg_p in mercury emissions from EGUs make these emissions more relevant to local and regional deposition than natural emissions comprised of elemental mercury. The national-scale risk assessment indicates that high variability exists in the contribution of U.S. EGUs to total mercury deposition. 76 Fed. Reg. at 25,008. Modeled contributions of EGU mercury emissions to total mercury deposition are greater than ten percent in hundreds of watersheds. *Id.* at 25,009. Deposition of mercury emitted by EGUs is proven to be significantly larger at locations close to emission sources. Excess mercury deposition can be as large as three times the regional average at these locations, known colloquially as "mercury hot spots," and the resulting higher biotic uptake of mercury in turn increases the local health risks associated with consuming contaminated fish and wildlife from these locations. *Id.* at 25,013. For many areas of the country, local EGUs are a more significant contributor to mercury's public health and environmental hazards than would appear from industry's formulation based on a simple look at the national average.

Furthermore, EPA data likely underestimate HAP emissions—and the resulting hazards to human health and the environment—as the data reflect average emissions rates from tests that do not take into account startup, shutdown, and malfunction (SSM) events, periods during which emissions are generally higher. If EPA believes that emissions test data do not adequately capture variability for the purposes of setting floors, it follows that the emissions test data EPA has also do not capture the full variability of sources' emissions for the

purposes of determining the extent of the hazards posed by EGUs' emissions. In setting floors, EPA addresses variability by adding a 99th percentile variability factor. Although we do not concede that approach is valid for reasons discussed elsewhere in these comments, the agency should use it consistently if it uses it at all. Thus, EPA should apply the same 99th percentile variability factor to its test data in determining the extent of hazard from EGUs' HAP emissions.

iv. The Agency Correctly Did Not Consider Implementation Costs in Determining Whether Regulation is Appropriate

The Proposed Rule states that costs may not be considered in determining whether regulation of EGUs is appropriate. *See* 76 Fed. Reg. at 24,988. In fact, the Clean Air Act makes clear that cost may not be considered at this stage. The Supreme Court has held that the Clean Air Act is detailed and technical, and Congress in it has expressly granted authority to consider the costs of implementation only in circumstances that are specifically indicated. That Congress has been so clear in those cases in which consideration of costs is allowed or required shows that implementation costs may not be relied upon by EPA when making decisions under sections that do not expressly provide for their consideration. *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 467 (2001); *see also Am. Textile Mfrs. Inst. v. Donovan*, 452 U.S. 490, 510 (1981) (finding a general presumption in all statutes that "[w]hen Congress has intended that an agency engage in cost–benefit analysis, it has clearly indicated such intent on the face of the statute"). Section 112(n)(1)(A) only requires that EPA "consider" the Utility Study in making its finding, and the Utility Study in turn is only required to cover "hazards to public health reasonably anticipated to occur." 42 U.S.C. § 7412(n)(1)(A). There is no statutory language or legislative history that renders unlawful or arbitrary EPA's conclusion that costs may not be considered when determining whether regulation of EGUs is appropriate and necessary.

v. EPA's "Necessary" Finding Provides Further Support for its 2000 Decision to Regulate and List EGUs Under Section 112.

a. Given that EGUs are the Largest Emitters of Several HAPs that Pose Hazards to Public Health and the Environment, It Would be Unreasonable to Determine Regulation is Not Necessary.

Courts have found that the "statutory term 'necessary' does not have a plain meaning." *E.g.*, *Cellular Telecomm. & Internet Ass'n v. Fed. Commc'ns Comm'n*, 330 F.3d 502, 504 (D.C. Cir. 2003). Rather, the meaning of "necessary" in any statute can only be determined after looking at its context. *Id.* at 510. Here, this context would include Congress's desired statutory goals, gleaned from the full text of the statute, its structure and its legislative history. Although EPA has discretion to determine whether regulation is necessary, *see* 76 Fed. Reg. at 24,986, 24,987, 24,990 (claiming that *Cellular Telecomm.*, 330 F.3d at 510, and other cases have given EPA "considerable" discretion in making its necessary finding), this discretion is not unlimited, *Ass'n of Irritated Residents v. EPA*, 632 F.3d 584, 593 (9th Cir. 2011) (finding that "failure to act in light of the strong evidence . . . is arbitrary and capricious").

With respect to section 112(n)(1)(A), both legislative history and other provisions in section 112 provide important context for the statutory term "necessary," and further support the Proposed Rule's conclusion that regulation of EGUs' HAPs is necessary to carry out the statutory goals. *See Ass'n of Irritated Residents*, 632 F.3d at 593–94 (finding that the overall purpose of a statute informs whether an agency's action is arbitrary and capricious). Congress in 1990 was unhappy with EPA's pace and historical inability to secure large-scale reductions of HAPs under the Act. *See* S. Rep. No. 101-228, at 128–33 (1989), *reprinted in* 1990 U.S.C.C.A.N 3385, 3513–18; *see also* H.R. Rep. No. 101-490, pt. 1, at 322 (1990) (noting that EPA had listed only eight HAPs between 1970 and 1990). When Congress restructured section 112 in the Clean Air Act Amendments of 1990, it eliminated much of EPA's discretion in determining both what substances to

regulate and how those substances should be regulated, in order to ensure that these dangerous substances would be reduced in a timely and effective fashion.

Instead of authorizing the Agency to do so, Congress itself listed 189 specific HAPs, 42 U.S.C. § 7412(b)(1), and required that EPA list industrial source categories and subcategories including major sources of the listed HAPs. Congress further required EPA to establish MACT emissions standards for all major sources and area sources in the listed categories on a carefully prescribed timetable, *id.* § 7412(c)(1)–(2), (c)(5), (d)(3). The precise textual directives and the structure Congress adopted in section 112 clearly evince Congress's understanding of the dangers to public health and the environment posed by the listed HAPs, and concern about expeditiously setting rigorous standards to reduce these highly toxic, frequently carainogenic pollutants. Given this framework and in light of the wealth of information and data showing that EGUs are the largest emitters of many HAPs with proven adverse effects on public health and the environment, it would be both unreasonable and outside EPA's discretion for the Agency not to reaffirm that it is necessary to regulate this industry.

b. EPA Correctly Made the "Necessary" Determination Prior to Full Implementation of the Act

Industry representatives in the past have argued that EPA is required to wait until the Clean Air Act is fully implemented before conducting the Utility Study and before any appropriate and necessary determination can be made. *Oversight: Review of EPA Regulations Replacing the Clean Air Interstate Rule (CAIR) and the Clean Air Mercury Rule (CAMR): Hearings before the Subcomm. on Clean Air & Nuclear Safety of the S. Comm. on Env't & Pub. Works*, 112th Cong. 5 (2011) (testimony of Barbara Walz, Sr. Vice President Policy & Environmental, Tri-State Generation & Transmission Ass'n).

This industry claim is unreasonable and contrary to the plain meaning of the statute. Congress was very specific that the Utility Study be completed by November 1993, 42 U.S.C. §7412(n)(1)(A), only three years after the Clean Air Act

Amendments of 1990. Congress was aware that it was impossible for all the provisions of the Clean Air Act to be fully implemented within three years. Moreover, many provisions of the 1990 Amendments had effective dates that extended beyond three years. *See, e.g.*, *id.* § 7412(c)(3) (area sources for hazardous air pollutants were not required to be regulated until November 2000); *id.* § 7651c (Phase I of the Acid Deposition Control program was not required to go into effect until January 1995).

Instead, Congress mandated that EPA conduct the Utility Study before November 1993 and estimate what emissions levels would be after the imposition of the requirements of the Act. The determination about whether regulation is necessary takes into consideration the reasonably foreseeable reductions in emissions levels due to those requirements. This interpretation is consistent with the plain language of the statute. Section 112(n)(1)(A) directs EPA to study the "hazards to public health *reasonably anticipated to occur* as a result of emissions by electric utility steam generating units of pollutants listed under subsection (b) of this section *after imposition* of the requirements of this Act." *Id.* § 7412(n)(1)(A) (emphasis added). If EPA were required to await full implementation of the Act, Congress would have used different language than it did in section 112(n)(1)(A). Thus, EPA completed the Utility Study, considered that study and made its appropriate and necessary finding prior to full implementation of the Clean Air Act.

c. EPA Correctly Determined that Regulation is "Necessary"

Section 112(n)(1)(A) requires that EPA regulate EGUs under section 112(d) if the agency finds regulation "necessary after considering the results of the [Utility] study," which in turn requires EPA to study the hazards posed by EGU emissions "after imposition of the requirements of [the Clean Air Act]." *Id.* § 7412(n)(1)(A). EPA in the Proposed Rule interprets the phrase "after imposition of the requirements of the [Clean Air Act]," *id.* § 7412(n)(1)(A), to require that EPA only consider "those requirements that Congress directly imposed on EGUs through the

[Clean Air Act] as amended in 1990 and for which EPA could reasonably predict HAP emission reductions at the time of the Utility Study." 76 Fed. Reg. at 24,990. The short time frame provided by Congress to complete the Utility Study, just three years, strongly suggests that Congress did not intend for EPA to search for any and all possible sources and levels of future regulation and predict the resulting emissions reductions before performing the Utility Study.

In the 2005 Delisting, EPA wrongly interpreted "the phrase 'imposition of the requirements of th[e] Act' to include not only those requirements already imposed and in effect, but also those requirements that EPA reasonably anticipates will be implemented [in the future] and will result in reductions of utility HAP emissions." 70 Fed. Reg. at 15,999; *see also* 69 Fed. Reg. at 4,686 (claiming that section 112(d) regulation is not necessary if there is some other "viable statutory authority by which to address Hg and Ni emissions from existing coal- and oil-fired Utility Units"). In light of section 112's history, the interpretation of "imposition of the requirements of [the Clean Air Act]" used in the 2005 Delisting is clearly unreasonable, and the interpretation used in the Proposed Rule is the correct one. At any rate, the Proposed Rule's interpretation is plainly a reasonable and permissible one.

The sections of the Clean Air Act that the 2005 Delisting argued could be used to regulate EGU HAP emissions instead of section 112 existed prior to Congress enacting the 1990 amendments. *See* 70 Fed. Reg. 15,994 (attempting to regulate mercury through sections 110(a)(2)(D) and 111); Clean Air Act Amendments of 1977, Pub. L. No. 95-95, 91 Stat. 685, 693, sec. 108(a)(4), § 110(a)(2)(E) (1977); 91 Stat. at 697–703, sec. 109, § 111. As discussed above, Congress was well aware in 1990 that these provisions were not effective in achieving the reduction in HAPs that Congress sought. *See* S. Rep. No. 101-228, at 128–33. It is unreasonable to assume that Congress intended for EGUs to avoid regulation under section 112 based on the existence of provisions that Congress already had found insufficient to achieve its desired emission reductions.

In sum, the Proposed Rule appropriately does not search for *other possible* sources of regulation within the Clean Air Act, but focuses solely on "requirements that Congress directly imposed on EGUs through the [Clean Air Act] as amended in 1990 and for which EPA could reasonably predict HAP emission reductions at the time of the Utility Study." 76 Fed. Reg. at 24,990 (also interpreting "requirements" to refer to "obligatory," and not just viable, sources of regulation).

EPA's statutory duty to regulate HAP emissions under section 112(d) springs from its listing decision, and as the D.C. Circuit has held, cannot be "undone" until the showings of section 112(c)(9) are made. *See* 42 U.S.C. § 7412(c)(9) (requiring for pollutants, like mercury, that cause non-cancer health effects, "a determination that emissions from no source in the category or subcategory concerned . . . exceed a level which is adequate to protect public health with an ample margin of safety and no adverse environmental effect will result from emissions from any source"). EPA's original 2000 appropriate and necessary finding was fully supported by the science before the Agency at the time, and EPA's reaffirmation of the finding in the Proposed Rule demonstrates that nothing in the years since proves to the contrary. Indeed there has been a great deal of new science in the interim period that provides ample support for the decision that MACT standards for this industry are necessary.

Finally, it is worth calling out specifically arguments that enjoy no statutory support and that are sometimes advanced by utility industry representatives to avoid MACT standards for utilities under sections 112(d)(2) & (3).

There is no statutory support for any suggestion that Congress considered the same listed HAPs *less* harmful and *less* worthy of regulation from power plants than from other industrial sectors emitting far *less* of those HAPs than EGUs. There is no statutory support for any suggestion that Congress wished EPA to return to the discredited, abandoned risk-based approach that existed prior to the 1990 amendments, or to apply that approach just to EGUs.

There is no statutory support for any suggestion that Congress meant to require EPA to make specific health-based or risk-based findings before

determining that it was "appropriate and necessary" to regulate HAP emissions from EGUs under section 112(d)(2) & (3). Indeed, other sections of the Act and other provisions in section 112 do contain such health- and risk-based language as a regulatory (or deregulatory) predicate, and it is instructive that the key final sentence of section 112(n)(1)(A) lacks any such language. *See, e.g.*, 42 U.S.C. § 7412(b)(3)(C) (allowing deletion from the HAP list only "if the substance may not reasonably be anticipated to cause any adverse effects to the human health or adverse environmental effects"); *id.* § 7412(c)(9)(B) (requiring specific health- and risk-based findings before a source category may be delisted); *id.* § 7412(d)(4) (permitting health-based emissions standards "[w]ith respect to pollutants for which a health threshold has been established"); *id.* § 7412(f)(2). Congress did not employ similar language or concepts in section 112(n)(1)(A) to constrain EPA's discretion to determine whether regulation is appropriate and necessary.[1]

There is no statutory support for any suggestion that the Administrator's determination that MACT regulation of EGUs is appropriate and necessary could *not* be based (in part) upon the appropriateness of treating the power sector equitably and similarly relative to other industrial sectors covered by MACT; upon the appropriateness of maintaining uniform regulatory treatment of HAP emissions from EGUs under section 112(d)(2) & (3); and upon the appropriateness of applying the proven, performance-based HAP reduction approach of sections 112(d)(2) & (3) to EGUs.

Industry commenters do not and cannot identify any statutory *prohibitions* under a *Chevron* step I analysis to EPA deeming MACT regulation for EGUs appropriate and necessary based upon the foregoing considerations. Nor can industry critics hope to establish that MACT regulation is arbitrary and capricious based upon the foregoing. EPA is following the statutory structure and instructions

[1] As discussed above, EPA must consider the results of the study prescribed by section 112(n)(1)(A) but EPA need not base its determination exclusively on that study. Accordingly the language describing the study in the first sentence of section 112(n)(1)(A) is not a Congressional directive imported directly or indirectly into the final sentence of that section to dictate the basis for EPA's determination.

that Congress has mandated for HAP regulation under the Clean Air Act, and it is unavailing to contend that applying this same structure and instructions to HAP emissions from EGUs is arbitrary and capricious. When Congress employs capacious and judgment-laden language like "appropriate and necessary," it is surely within EPA's discretion and authority to determine the statutory structure and instructions prescribed by Congress for HAP regulation is reasonable and justified for HAP emissions from the single largest industrial source of those toxic emissions.