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ENVS 171 - Clean Air Act Policy Paper

The Clean Air Act (42 U.S.C. 7401 et seq.), henceforth CAA, "seeks to protect human health and the environment from emissions that pollute ambient, or outdoor, air" (Congressional Research Service, 2020). Being first enacted in 1955, the CAA has seen significant revisions in 1970, 1977, and 1990. Primary requirements of the CAA focus on environmental and personal health requirements: "requires EPA [Environmental Protection Agency] to set health-based standards for ambient air quality; sets deadlines for the achievement of those standards by state and local governments; requires EPA to set national emission standards for large or ubiquitous sources of air pollution, including motor vehicles, power plants, and other industrial sources; mandates emission controls for sources of 187 hazardous air pollutants; established a cap-and-trade program to limit acid rain; requires the prevention of significant deterioration of air quality in areas with clean air; requires a program to restore visibility impaired by regional haze in national parks and wilderness areas; and implements the Montreal Protocol to phase out most ozone-depleting chemicals" (Congressional Research Service, 2020).

The EPA is responsible for establishing "minimum national standards for air quality and assigns primary responsibility to the states to assure compliance with the standards" (Congressional Research Service, 2020). States are required to implement state plans to meet the national standards and must account for emissions that may significantly affect air quality to "downwind" states (EPA, Government Partnerships...). The EPA would provide guidance and assistance for state planning and review state plans to meet the CAA. In addition to state partnerships with the EPA, tribal governments can also implement the CAA in their areas. The EPA authorizes tribal governments, if they meet requirements and specifications, to roll out

CAA programs (EPA, Government Partnerships...). Specifically, in California (CA), the California Air Resources Board (CARB) is responsible for regulation, enforcement, and research related to air quality in CA (CARB, History).

Major requirements of the CAA are the establishment of National Ambient Air Quality Standards (NAAQS), state implementation plans, nonattainment requirements, transported air pollution, emission standards for mobile sources, hazardous air pollutants, new source pollutant standards, solid waste incinerators, prevention of significant deterioration of air quality and regional haze, acid deposition control, permits, enforcement, and stratospheric ozone protection (Congressional Research Service, 2020).

The Congressional Research Service broke down the major requirements of the CAA and the parties required for these requirements. As part of the CAA, the EPA is required to establish NAAQS, in which these standards are designed to protect public health "with an adequate margin of safety and to protect public welfare from any known or anticipated adverse effects" (Congressional Research Service, 2020). As part of the EPA's NAAQS, there are six major air pollutants: sulfur dioxide, particulate matter, nitrogen dioxide, carbon monoxide, ozone, and lead (Congressional Research Service, 2020). State implementation plans (SIPs) are required under Section 110 of the CAA, where states are required to submit these to the EPA to ensure they are meeting the requirements of the CAA. As part of Sections 181 – 193 in the amended 1990 CAA, nonattainment requirements are where NAAQS was exceeded with specific pollution controls established and attainment dates for each pollutant. In addition to local air pollution, the CAA looks at transported air pollution, where SIPs must include provisions to prevent sources within that state from contributing significantly to nonattainment in one or more downwind states – also known as the "Good Neighbor" provision (Congressional Research Service, 2020). With the

1990 amendments, standards for automobiles were significantly tightened where emission standards for mobile sources are required to be established at the federal level by the EPA. Section 111 of the CAA required the EPA to establish "nationally uniform, technology-based standards (called New Source Performance Standards, or NSPS) for categories of new industrial facilities" (Congressional Research Service, 2020). In a new section of the 1990 amendment to the CAA, Section 129 was established for consistent federal incinerator requirements. The prevention of significant deterioration of air quality (PSD) was established in Sections 160-169 of the CAA, where air quality should increase even if NAAQS is not being violated (Congressional Research Service, 2020). Requirements of PSD are broken up by classes (I to III), with varying requirements and levels of pollutants allowed. In the 1990 amendment, an acid deposition control program was established to set goals of reducing sulfur dioxide (Congressional Research Service, 2020). In addition to the acid deposition requirements, state permits were required in the 1990 amendments, where the permit program would be established for the operation of sources emitting air pollutants (Congressional Research Service, 2020). Enforcement was strengthened in the 1990 amendments, where this established "federal authority to issue agency and court orders requiring compliance and to impose penalties for violations of Act requirements" (Congressional Research Service, 2020). The last major requirement of the CAA, Title VI, was established for stratospheric ozone protection. As part of these requirements for ozone depletion prevention, the U.S.' involvement in the Montreal Protocol was established in the 1990 amendments.

As part of the CAA, the EPA weights the benefits and costs of the CAA in prospective studies. The EPA, in March 2011, issued the "Second Prospective Report which looked at the results of the [CAA] from 1990 to 2020 (EPA, Benefits, and Costs...). This prospective study

found that benefits exceeded costs by a factor of more than 30 to one, in 2020 the CAA will prevent over 230,000 early deaths, and it was shown that the "CAA programs were projected to result in a net improvement in U.S. economic growth and the economic welfare of American households" (EPA, Benefits and Costs...). It is projected that the CAA has had associated benefits of \$2 trillion, where the costs are \$65 billion. This prospective study shows that the goals of the CAA are being met – with healthier living, saved lives, and decreased pollutants. In addition to the EPA conducting studies on the effectiveness of the CAA – associate professor of Economics – J. Scott Holladay analyzed the Clean Air Act. From the EPA prospective study, Holladay found that the CAA has "significantly reduced the flow of criteria pollutants into the environment" (Holladay, 5). Holladay conveys that there are benefits that cannot be quantified or monetized, therefore, developing a better model to measure all effects of the CAA.

Discussions around the EPA's ability to regulate is a common dispute. In late October 2021, the Supreme Court "agreed to hear a case from Republican-led states and coal producers challenging the [EPA] 's authority to regulate greenhouse gases and address the climate crisis" (de Vogue and Nilsen, 2021). The argument against the EPA's restrictions is that they are impossible to meet, and no limits are set. Therefore, this question of whether or not the EPA has the power to regulate greenhouse gas emissions dates back to the Obama administration, where the Supreme Court temporarily blocked the administration to regulate coal-fired power plants (de Vogue and Nilsen, 2021). Arguments against the questioning of the EPA's ability to regulate greenhouse gas was refuted by the EPA Administrator Michael Regan: "Power plant carbon pollution hurts families and communities, and threatens businesses and workers. The Courts have repeatedly upheld EPA's authority to regulate dangerous power plant carbon pollution" (de Vogue and Nilsen, 2021). Another present-day climate and clean air related article is related to

the EPA revoking Trump policy that loosened clean air rules. The EPA revoked a "Trump-era rule that overhauled how the agency evaluated air pollutants," which was said to have "limited [the] EPA's ability to use their best available science in developing regulations under the Clean Air Act" (Daly, 2021).

Further studies of the CAA are continually being conducted. A team of analysts and economists at Carnegie Mellon University analyzed the impacts of the CAA on the power industry. The study found that "county nonattainment designations under the Clean Air Act had negative effects on output and productivity, but only for plants built before 1963", which coincides with the original passage of the CAA in 1963 (Kizielewicz, 2021). This particular study furthers the study and analysis of the effects of the CAA.

In discussing the CAA, environmental justice is an essential factor in considering whether or not all communities see the benefits of these changes. In a report for Brookings Institution, a nonprofit public policy organization based in Washington, D.C., climate policy and environmental justice were discussed, and recommendations were made. Fowlie et al. (2020) convey that "the regulatory framework designed to safeguard our air quality is failing to adequately address local air pollution problems, particularly in low income communities and communities of color located near pollution sources" (Fowlie, Walker, and Wooley, 2020). This report looks specifically at AB 617 in California which "designed to directly address ongoing issues of local air pollution in disadvantaged communities, recognizing that the existing provisions under AB 32 and the Clean Air Act were insufficient" (Fowlie, Walker, and Wooley, 2020). Fowlie et al. (2020) convey that this CA bill is too early to tell if it will succeed. Still, they convey that this should serve as an example that other states or federal policy air policy should be adopted to ensure proper environmental justice of air quality.

The CAA has been shown to be beneficial on the federal level: increasing public health, lowering pollutants, and regulating climate crisis causing emissions. However, a focus on environmental justice and equity should be focused on moving forward – ensuring that all communities receive the CAA's benefits equally.

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