

LASTING PROTECTION: EQUIPPING FEDERAL TOXICS REGULATIONS FOR THE LONG HAUL

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ABSTRACT

The United States Environmental Protection Agency (EPA) recently took actions allowing for continued or even expanded use of asbestos and chlorpyrifos—two hazardous substances that are strictly prohibited for use in numerous countries around the world. Many have accused the Trump Administration’s EPA of going too far in rolling back federal regulations of these toxic substances, which are known to pose substantial threats to public health and the environment. The EPA’s actions, which appear to have been influenced by private special interests, are emblematic of a growing inability for the federal government to reliably protect the public from highly hazardous chemicals. This Article describes the existing federal regulatory structure governing toxic substances and how that structure has recently devolved in potentially dangerous ways. The Article then uses basic public choice theory and behavioral economics principles to highlight how political rent-seeking and myopic behavior are contributing to these challenges. Ultimately, this Article describes specific policy strategies that could fortify federal restrictions on toxic substances and better insulate them against shortsighted political influence. Making it more difficult for a single presidential administration to significantly loosen restrictions on these types of substances would help to ensure that these important laws continue to adequately protect Americans’ health and safety far into the future.

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INTRODUCTION

“If the Bill of Rights contains no guarantee that a citizen shall be secure against lethal poisons distributed either by private individuals or by public officials, it is surely only because our forefathers, despite their considerable wisdom and foresight, could conceive of no such problem.”

–Rachel Carson¹

In 2016, President Obama signed the Frank R. Lautenberg Safety for the 21st Century Act into law, creating new safeguards against toxic substances for millions of Americans.² The Act amended provisions in the Toxic Substances Control Act of 1976 (TSCA) to further strengthen federal restrictions on uses of several types of toxic chemicals.³ The enactment of TSCA in the 1970s was an important shift toward greater federal defenses against toxic substances and their potential impacts on public health and safety.⁴ In the decades since the TSCA’s enactment, Congress and state legislatures have gradually strengthened statutory protections against known carcinogenic and mutagenic chemicals.

However, in April of 2019, the United States Environmental Protection Agency (EPA) began a process to reverse the nation’s longstanding trend toward stronger protections against hazardous substances by issuing a Significant New Use Rule (SNUR) that potentially expanded opportunities for U.S. companies to manufacture and sell new asbestos-containing products.⁵ Under the SNUR, the EPA would merely require any person who intended to manufacture or process asbestos for any of 14 listed possible uses to notify the Agency at least 90 days in advance so that the Agency could review the proposed use.⁶ Supporters of the SNUR claimed that imposing an outright ban on asbestos would harm the nation’s economy by potentially

1. RACHEL L. CARSON, *SILENT SPRING* 12–13 (Houghton Mifflin Co. 1962).

2. Jessica Miller, Note, *Spread Too Thin: How the Preemption Provisions in the 2016 Amendments to TSCA Weakened the Federal Government’s Regulation of Chemical Manufacturing*, 9 *GEO. WASH. J. ENERGY & ENV’T L.* 162, 166 (2019).

3. Mitchell L. Guc, Note, *TSCA and the Lautenberg Act: Bloated Regulation, or Effective Legislation?*, 49 *U. TOL L. REV.* 461, 473–74 (2018).

4. Valerie J. Watnick, *The Lautenberg Chemical Safety Act of 2016: Cancer, Industry Pressure, and A Proactive Approach*, 43 *HARV. ENV’T L. REV.* 373, 377 (2019).

5. Gary Pasheilich, *Asbestos Receiving Renewed Attention in Light of Additional US EPA Assessments under TSCA and Potential Ban by Congress*, *NATL L. REV.* (June 10, 2019), <https://www.natlawreview.com/article/asbestos-receiving-renewed-attention-light-additional-us-epa-assessments-under-tsca>.

6. *Id.*

affecting domestic chlorine production.⁷ The rule did seemingly create some constraints against new asbestos-containing products by expressly requiring that the EPA review any new proposed uses of asbestos upon notification.⁸ However, the SNUR drew heavy criticism from environmental groups, public health professionals, and lawmakers for giving too much discretion to the EPA and not placing adequate restrictions on such a highly hazardous substance.⁹

Only a few months later, in July of 2019, the EPA took another step toward loosening an important federal toxic substance restriction when it announced that the Agency would likewise not ban chlorpyrifos—a pesticide linked to severe health risks, including neurological damage in children.¹⁰ The EPA’s announcement was a reversal of the Agency’s proposal for a total federal ban on the chemical introduced in 2015 under the Obama Administration.¹¹ The EPA banned chlorpyrifos for household use in 2000 because of the risk of neurotoxicity to consumers, but it is still widely used for commercial agricultural applications.¹² The Agency’s decision not to ban chlorpyrifos was a victory for the chemical industry, which had argued that the pesticide was thus crucial to the nation’s agricultural sector because of its effectiveness at controlling insect populations.¹³ However, the decision also marked a second major setback within a few months for federal protections against hazardous substances.

This Article argues that the EPA’s recent efforts to loosen asbestos and chlorpyrifos restrictions are signs that industry influence and myopic political decision-making are dangerously eroding government protections against toxic substances and identifies specific strategies for reversing this trend and preventing it from reemerging in future years. Parts I and II of this

7. See Bergeson & Campbell, P.C., *Final SNURs Will Break New Ground under Amended TSCA*, NAT’L L. REV. (Apr. 1, 2019), <https://www.natlawreview.com/article/final-snurs-will-break-new-ground-under-amended-tsca> (mentioning a commentator who encouraged EPA to use its discretion while considering all relevant factors, including cost).

8. Rachel Sasser, *Inadequate New EPA Rule Far From Complete Asbestos Ban*, MESOWATCH (June 23, 2019), <https://mesowatch.com/inadequate-new-epa-rule-far-from-complete-asbestos-ban/>.

9. *Id.*

10. Dan Nosowitz, *Trump’s EPA Decides Not to Ban Chlorpyrifos*, MODERN FARMER (Aug. 6, 2019), <https://modernfarmer.com/2019/08/trumps-epa-decides-not-to-ban-chlorpyrifos/>.

11. See Thomas O. McGarity & Wendy E. Wagner, *Deregulation Using Stealth “Science” Strategies*, 68 DUKE L. J. 1719, 1736 (2019) (explaining why the EPA under the Obama Administration proposed to revoke all tolerances for chlorpyrifos based on the requirements of the 1996 Food Quality Protection Act).

12. See Philip J. Landrigan et al., *Pesticides and Inner-City Children: Exposures, Risks, and Prevention*, 107 ENV’T HEALTH PERSP. 431, 432 (1999) (explores children’s vulnerability to pesticides, particularly inner-city children, with an emphasis on developmental toxicity of chlorpyrifos).

13. See Lisa Friedman, *E.P.A. Won’t Ban Chlorpyrifos, Pesticide Tied to Children’s Health Problems*, N.Y. TIMES (July 18, 2019), <https://www.nytimes.com/2019/07/18/climate/epa-chlorpyrifos-pesticide-ban.html> (discussing the EPA’s decision not to widely ban the pesticide chlorpyrifos and comparing the different EPA approaches to the pesticide under Obama and Trump).

article examine the background and history of federal legislation and regulation surrounding asbestos and chlorpyrifos, including recent regulatory rollbacks involving these chemicals. Part III applies certain public choice concepts to analyze the federal government's recent struggles to regulate toxic substances effectively. Part IV describes some specific strategies capable of preventing special interests from further eroding the nation's federal restrictions on hazardous substances. Among other things, this Article argues for major revisions to the TSCA, the U.S. federal statute that governs toxics, suggesting that the TSCA should model after the European Union's Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH) regulation.¹⁴ This would be to create greater transparency, place burdens of proof on manufacturers to demonstrate chemical safety, and impose more stringent and robust standards.

I. BACKGROUND AND REGULATORY HISTORY

The EPA's recent loosening of federal restrictions on asbestos and chlorpyrifos and the potential for similar future rollbacks are creating new and unjustifiable risks for citizens across the U.S. The EPA is the federal executive administrative agency chiefly responsible for developing and enforcing environmental and public health policies.¹⁵ Congress has specifically charged the EPA with protecting the public from the adverse health risks of asbestos and with ensuring that only safe chlorpyrifos products find their way into the nation's economy.¹⁶ For decades, the EPA has faithfully fulfilled this duty, gradually increasing some restrictions on these and other harmful substances as scientific knowledge of their impacts have advanced over time.

The EPA's longstanding stewardship over federal toxic chemical regulation appeared to take a sharp turn in 2019 when the agency promulgated a SNUR, creating the possibility for asbestos-containing products to find their way back into U.S. markets and with the agency's subsequent reversal of its position on banning chlorpyrifos.¹⁷ The following subsections provide a brief history of asbestos and chlorpyrifos regulation in

14. See generally Richard A. Denison, *A Primer on the New Toxic Substances Control Act (TSCA) and What Led to it*, ENV'T DEF. FUND, 2, 4 (Apr. 2017), <https://www.edf.org/sites/default/files/denison-primer-on-lautenberg-act.pdf> (summarizing the TSCA and giving an overview of the reforms made to TSCA by the Frank R. Lautenberg Chemical Safety for the 21st Century Act).

15. *Our Mission and What We Do*, U.S. ENV'T PROT. AGENCY (Jan. 21, 2017), https://19january2017snapshot.epa.gov/aboutepa/our-mission-and-what-we-do_.html (last visited Sept. 6, 2020).

16. See Denison, *supra* note 14, at 2 (stating TSCA grants EPA broad authority to regulate chemicals found to present an unreasonable risk to health or environment).

17. Pashelich, *supra* note 5; Friedman, *supra* note 13.

the U.S., describe the potential environmental and health dangers of these products, and highlight the EPA's recent changes in its approach to regulating their use.

A. Asbestos Regulatory History

Congress enacted the Clean Air Act (CAA) in 1970, empowering the federal government to protect the public from hazardous airborne contaminants.¹⁸ Pursuant to the CAA, a newly-formed EPA soon issued National Emissions Standards for Hazardous Air Pollutants (NESHAP) to help limit public exposure to a long list of contaminants.¹⁹ Under NESHAP's framework, hazardous air pollutants include compounds that are known or suspected to cause cancer or other serious health effects.²⁰ On March 31, 1971, the EPA identified asbestos as one such hazardous air pollutant.²¹

In the 1970s, Congress enacted multiple bills calling for expanded federal restrictions on the use, distribution, and manufacture of asbestos and other harmful chemicals.²² The TSCA of 1976 was crucial in this legislative movement because it gave the EPA the authority to regulate new and existing commercial chemicals that posed an "unreasonable risk" of injury to health or the environment.²³ The TSCA provides the EPA the authority to require reporting, record-keeping and testing requirements, and to place restrictions relating to chemical substances.²⁴

In the years following the TSCA's enactment, the EPA imposed increasingly strict regulations on asbestos and asbestos-containing products.²⁵ This era of rulemaking eventually culminated with an attempt to impose an outright ban on almost all asbestos-containing products in 1989.²⁶

18. See *Learn about Asbestos*, EPA, <https://www.epa.gov/asbestos/learn-about-asbestos#asbestos> (last updated Sept. 17, 2018) (stating that asbestos exposure occurs only when the asbestos material is disturbed or damage therefore releasing particles into the air causing health risks).

19. *Asbestos Laws and Regulations*, EPA, <https://www.epa.gov/asbestos/asbestos-laws-and-regulations#reg> (last updated Sept. 25, 2020).

20. *Id.*

21. *Overview of the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP)*, EPA, <https://www.epa.gov/asbestos/overview-asbestos-national-emission-standards-hazardous-air-pollutants-neshap> (last updated Jan. 30, 2020).

22. See Cristin Dale Mustillo, Comment, *Persistently Present, Inconsistently Regulated: The Story of Asbestos and the Case for A New Approach Toward the Command and Control Regulation of Toxics*, 2013 MICH. ST. L. REV. 257, 263–64 (2013) (mentioning the passage of eighteen acts by Congress between 1970 and 1980).

23. See Guc, *supra* note 3, at 465.

24. 15 U.S.C. § 2601 (1976); Denison *supra* note 14, at 8–9.

25. See *Corrosion Proof Fittings v. E.P.A.*, 947 F.2d 1201, 1207–08 (5th Cir. 1991) (finding EPA failed to consider and reject less burdensome alternatives before imposing a complete ban); See also *EPA Actions to Protect the Public from Exposure to Asbestos*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/asbestos/epa-actions-protect-public-exposure-asbestos> (last updated Mar. 20, 2020) (detailing EPA regulatory history for asbestos).

26. *Corrosion Proof Fittings v. E.P.A.*, 947 F.2d at 1207–08.

Industry stakeholders—including asbestos mining companies and product manufacturers—responded to this effort with a lawsuit against the EPA’s ban. These opponents of the ban cited that feasible alternatives to asbestos in certain industries were cost prohibitive.²⁷

In 1991, the Fifth Circuit Court of Appeals held that the EPA had violated the TSCA by not adequately demonstrating that its asbestos ban was the “least burdensome” action that could achieve an acceptable level of risk.²⁸ The Court reasoned that the TSCA required the EPA to regulate asbestos in a way that imposed the smallest burden necessary on regulated parties.²⁹ In essence, the Court held that the EPA had not correctly balanced the risk of banning asbestos against public health benefits and had failed to provide a reasonable basis for its asbestos ban because there was arguably no viable substitute for asbestos in the marketplace.³⁰ The Court further found that the EPA had failed to prove its proposed asbestos alternatives were safe and that the agency had adequately considered the potential risks and costs of flatly banning asbestos products.³¹ Regardless, the Court’s holding enabled asbestos-containing products to remain in U.S. commerce, and policymakers never successfully enacted an outright ban on asbestos and asbestos-containing products.

Despite this judicial defeat of an outright asbestos ban, numerous legislative bills aimed at preventing asbestos from harming citizens and the environment continued to appear in Congress. In particular, 30 years after the enactment of the TSCA, President Obama signed the Frank R. Lautenberg Chemical Safety for the 21st Century Act into law in 2016.³² The Act amended the TSCA, granting the EPA additional authority to evaluate the hazards posed by new and existing commercial chemicals.³³ The Act mandated that the EPA conduct risk assessments of hazardous chemicals and regulate them according to the results of these assessments and studies.³⁴ Shortly after the Act became law, the EPA identified asbestos as one of the first ten chemicals it would assess under its provisions.³⁵

27. *Id.* at 1218–19.

28. *Id.* at 1215.

29. *Id.* at 1215–16.

30. *Id.* at 1229.

31. *Id.* at 1230.

32. Frank R. Lautenberg Chemical Safety For The 21st Century Act, Pub. L. No. 114-182, 130 Stat. 448 (2016).

33. *Id.*

34. *Id.*

35. See Eric Lipton, *The Chemical Industry Scores a Big Win at the E.P.A.*, N.Y. TIMES (June 7, 2018), <https://www.nytimes.com/2018/06/07/us/politics/epa-toxic-chemicals.html> (discussing EPA’s evaluation of potentially toxic chemicals and EPA’s decision to focus on harm caused by direct contact as opposed to contact through air, water, and soil).

In April of 2019, after the EPA had completed much of its new asbestos risk assessment, the Agency proposed a SNUR to govern future manufacturing, importing, and processing of asbestos and asbestos-containing products and materials in the U.S.³⁶ Among other things, the SNUR proposed to require asbestos importers and manufacturers to receive approvals from the EPA before starting or resuming asbestos importation or production. However, the rule left the door open for significant continued use of asbestos within the U.S. Although the EPA had not yet released its final draft assessment as of early 2020, its proposed SNUR has already drawn intense criticism from policymakers, scientists, and environmentalists.³⁷

Partially in response to the EPA's proposed SNUR for asbestos, a new bill was introduced in Congress in 2019 aimed at further strengthening restrictions on the substance. The Alan Reinstein Ban Asbestos Now Act of 2019 (H.R. 1603) sought to further amend the TSCA and flatly prohibit the manufacture, processing, and distribution of asbestos and asbestos-containing mixtures and articles.³⁸ If enacted, this prohibition would have taken effect within one year, with specific exemptions for national security purposes. H.R. 1603 was introduced in March 2019 with 26 sponsors and passed through the Energy and Commerce Committee's Environment and Climate Change Committee in November 2019 with bipartisan support, thereby advancing for consideration by the full House of Representatives.³⁹

However, certain powerful industry stakeholders soon began advocating for changes aimed at weakening provisions of H.R. 1603. For instance, Michael P. Walls, the Vice President of Regulatory and Technical Affairs of the American Chemistry Council (ACC), voiced strong opposition to the bill.⁴⁰ Specifically, he argued that the provision in the original version of H.R. 1603 would endanger public health by leading to significant shortages of chlorine and forcing chlor-alkali manufacturers to operate without viable alternatives in the short term.⁴¹

36. Pasheilich, *supra* note 5.

37. See Sasser, *supra* note 8 (stating how the president of a non-profit responded to the EPA rule, calling it disappointing); see *infra* Section II.B. (discussing the controversy surrounding the EPA's recent ruling).

38. H.R. 1603, 116th Cong. (2019) (extending the phase-out for the chlor-alkali industry, clarifying the timing and content of required reports, and which non-asbestiform varieties of winchite and richterite are covered by the ban, adopting an impurity threshold for construction materials, and instructing the EPA to enter into a contract with the National Academy of Science to produce a report on legacy asbestos and associated exposures); Pasheilich, *supra* note 5.

39. Pasheilich, *supra* note 5.

40. *Ban Asbestos Now: Taking Action to Save Lives and Livelihoods: Hearing on H.R. 1603 Before the H. Comm. On Energy and Comm.'s Subcomm. On Env't and Climate Change*, 116th Cong. 3 (2019) (statement of Michael P. Walls, Vice President, Regulatory and Technical Affairs American Chemistry Council).

41. *Id.*

Despite this industry opposition, H.R. 1603 has enjoyed considerable support as it waits to advance through Congress. In July of 2019, 18 state attorney generals called on Congress to pass the ban.⁴² And in October 2019, two former EPA administrators published a high-profile opinion piece expressing their support for it.⁴³

B. The Chlor-alkali Industry

The chlor-alkali industry, which has long relied heavily on asbestos in its manufacturing process, is the principal opponent to new asbestos regulation in the U.S.⁴⁴ In 2018, the chlor-alkali industry was responsible for all domestic consumption of asbestos minerals.⁴⁵ Much of the industry relies on asbestos to assist in a chemical process used to produce chlorine and sodium hydroxide, both of which are widely used in various materials and products.⁴⁶ In particular, chlorine is critically important to the nation's construction and agricultural industries.⁴⁷ Most of the nation's chlorine is used in the production of four plastics: polyvinyl chloride (PVC), epoxies, polycarbonate, and polyurethane.⁴⁸ About 54% of U.S.-produced chlorine is used to make PVC worldwide.⁴⁹

The largest U.S. chlorine producers use either mercury or asbestos in the production process.⁵⁰ In Europe, a small number of large chlor-alkali plants are exempt from a regulation that prohibits asbestos and thus continue to use asbestos to produce chlorine, but most others use mercury.⁵¹ In the Americas, about 45% of chlorine plants, including 8 of the 12 largest operating plants,

42. Xavier Becerra et al., *Re: H.R. 1603, the Alan Reinstein Ban Asbestos Now Act of 2019*, MD. ATT'Y. GEN. (July 12, 2019), http://www.marylandattorneygeneral.gov/News%20Documents/071219_Ban_Asbestos_Now_Act.pdf.

43. Gina McCarthy & William Reilly, *Asbestos Kills Nearly 40,000 Americans a Year. Ban It.*, N.Y. TIMES (Oct. 15, 2019), <https://www.nytimes.com/2019/10/15/opinion/asbestos-epa-trump.html?searchResultPosition=1>.

44. See Tim Povtak, *Chloralkali Industry Wants Exception to Proposed US Asbestos Ban*, MESOTHELIOMA CTR. (June 25, 2019), <https://www.asbestos.com/news/2019/06/25/chlor-alkali-asbestos-ban/> (demonstrating the chlor-alkali industry's reliance on asbestos import in 2018).

45. DANIEL M. FLANAGAN, U.S. GEOLOGICAL SURV., MINERAL COMMODITY SUMMARIES 2019 26 (2019), https://prd-wret.s3-us-west-2.amazonaws.com/assets/palladium/production/atoms/files/mcs2019_all.pdf.

46. *Id.*

47. *Chlorine*, CHEMICALSAFETYFACTS.ORG, <https://www.chemicalsafetyfacts.org/chlorine> (last visited Nov. 29, 2020).

48. JIM VALLETTE, HEALTHY BLDG. NETWORK, CHLORINE AND BUILDING MATERIALS: A GLOBAL INVENTORY OF PRODUCTION TECHNOLOGIES, MARKETS, AND POLLUTION 2 (2018) (describing how PVC is used in pipes, siding, flooring, roofing, and other construction materials). PVC is 60% chlorine by weight. *Id.* Chlorine is also an essential feedstock for epoxies used in adhesives and flooring topcoats, and for polyurethane used in flooring and insulation. *Id.*

49. *Id.*

50. *Id.*

51. *Id.* at 10.

use asbestos-based technologies.⁵² Seven of these eight plants are located on the U.S. Gulf Coast; the eighth plant is in Brazil, which will soon totally phase out asbestos mining.⁵³ With the closing of the Brazilian asbestos mines, U.S. firms may soon depend almost exclusively on Russian asbestos mines to supply the substance.⁵⁴

In addition to utilizing tons of asbestos, chlorine processing plants inflict significant other environmental and public health risks.⁵⁵ Chlor-alkali facilities in the U.S. and Canada release over 400 tons of chlorine gas into the atmosphere per year.⁵⁶ Despite heavy regulation, these plants ultimately also dispose some asbestos into the environment, contaminating surroundings and imposing risks on employees and others.⁵⁷

C. Asbestos and Public Health Risks

The substantial environmental and health risks associated with asbestos exposure have been documented for over half a century.⁵⁸ The EPA recognizes three serious medical conditions associated with asbestos exposure: lung cancer, mesothelioma, and asbestosis.⁵⁹ Although most people exposed to asbestos will not develop mesothelioma, asbestos exposure accounts for 70%–80% of documented mesothelioma cases.⁶⁰ Each year, nearly 40,000 people in the U.S. die from preventable asbestos-caused diseases.⁶¹

Occupational exposure to asbestos is likely the most prevalent incidence of human contact with asbestos. Many industries have made commercial uses of asbestos for over 100 years.⁶² Nearly 125 million people worldwide are

52. *Id.* at 3.

53. *Id.*

54. *Id.*

55. *Id.*

56. *Id.*

57. See 29 C.F.R. §§ 1910, 1915, 1926 (1994) (regulating occupational safety and health standards).

58. John R. Balmes, *Asbestos and Lung Cancer: What We Know*, 188 AM. J. RESPIRATORY & CRITICAL CARE MED. 8, 9 (2013).

59. *Overview of the Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP)*, EPA, <https://www.epa.gov/asbestos/overview-asbestos-national-emission-standards-hazardous-air-pollutants-neshap> (last updated Jan. 30, 2019).

60. Joseph R. Testa et al., *Mesothelioma*, NAT'L ORG. FOR RARE DISEASES (2017) <https://rarediseases.org/rare-diseases/mesothelioma/>.

61. McCarthy and Reilly *supra* note 43; see *Asbestos Frequently Asked Questions*, SAN FRANCISCO DEP'T OF PUB. HEALTH 1, 3, <https://www.sfdph.org/dph/files/EHSdocs/ehsAsbestos/AsbestosFAQ.pdf> (last visited Dec. 12, 2020) (explaining that drinking-water can be contaminated by asbestos through the erosion of natural deposits, leeching from asbestos waste in landfills, from the deterioration of asbestos-containing cement pipes used to carry drinking water, or from the filtering of water supplies through asbestos-containing filters).

62. Daniel King, *History of Asbestos*, MESOTHELIOMA CTR., <https://www.asbestos.com/asbestos/history/> (last modified Feb. 3, 2020).

occupationally exposed to asbestos each year, with construction workers, shipbuilders, miners, electricians, and other blue-collar workers at high risk.⁶³ Asbestos inhalation and ingestion are the primary routes of exposure that may lead to cancer and mesothelioma.⁶⁴ Laborers commonly inhale and ingest asbestos during mining and milling operations for the substance, the manufacture or use of asbestos-containing products, construction or automobile manufacturing activities involving asbestos, or the transportation or disposal of asbestos-containing wastes.⁶⁵ Although federal and state regulations have helped to reduce asbestos exposure in the U.S. in recent years, that progress could quickly be lost if the government were to unduly loosen asbestos restrictions.⁶⁶

D. What is Chlorpyrifos?

Like asbestos, chlorpyrifos is a highly hazardous chemical that has long been subject to strict regulations within the U.S. Chlorpyrifos is an organophosphate pesticide belonging to a class of chemicals that includes nerve gas agents such as sarin gas.⁶⁷ Chlorpyrifos and other organophosphates can adversely affect the human nervous system and brain development.⁶⁸

Chlorpyrifos was first registered with the EPA as a permitted pesticide in 1965.⁶⁹ Although chlorpyrifos was initially approved to treat food and feed crops, by 1987 nearly half of all the chlorpyrifos produced in the U.S. was being used in non-agricultural settings.⁷⁰ In the early 1990s, chlorpyrifos was commonly used in households to eradicate cockroaches and termites.⁷¹ At its peak, chlorpyrifos was one of the most common pesticides in the U.S.,

63. *Asbestos: Elimination of Asbestos-Related diseases*, WORLD HEALTH ORG. (Feb. 15, 2018), <https://www.who.int/news-room/fact-sheets/detail/asbestos-elimination-of-asbestos-related-diseases>; Christopher Gerry, *When Politics Trumps Science: Why Asbestos is Still Legal in the USA*, HARVARD UNIV. SITN: BLOG, SCI. POLICY (Aug. 20, 2018), <http://sitn.hms.harvard.edu/flash/2018/asbestos-still-legal-usa/>.

64. Daniel King, *Occupational Asbestos Exposure*, MESOTHELIOMA CTR., <https://www.asbestos.com/occupations/> (last modified Sept. 23, 2020).

65. See INT'L AGENCY FOR RSCH. ON CANCER, ARSENIC, METALS, FIBRES, AND DUSTS: A REVIEW OF HUMAN CARCINOGENS 45 (2012), https://www.ncbi.nlm.nih.gov/books/NBK304375/pdf/Bookshelf_NBK304375.pdf, (explaining how human actions can release asbestos fibers into the air).

66. *Id.* at 11.

67. See Patrick Paul, *Ninth Circuit Upholds EPA Pesticide "Action"*, 32 NAT. RES. & ENV'T 58, 59 (2018) (describing legislation that classifies chlorpyrifos as a nerve agent pesticide).

68. Lori Cuthbert, *EPA Must Ban Dangerous Insecticide Chlorpyrifos: What is it?*, NAT'L GEO. (Aug. 10, 2018), <https://www.nationalgeographic.com/environment/2018/08/chlorpyrifos-insecticides-pesticides-epa-organophosphates/> (arguing why EPA should ban chlorpyrifos).

69. Paul, *supra* note 67.

70. OFF. OF PESTICIDE PROGRAMS, U.S. ENV'T PROT. AGENCY, EPA-738-R-01-007, INTERIM REREGISTRATION ELIGIBILITY DECISION FOR CHLORPYRIFOS at viii (2002).

71. Landrigan et al., *supra* note 12.

appearing in over 400 registered products.⁷² However, in 1997, the EPA started to reduce residential exposure to chlorpyrifos by banning its use in household products.⁷³ In 2000, in response to a growing catalog of evidence about the potential health hazards of chlorpyrifos, the EPA agreed to phase out nearly all residential applications of the substance.⁷⁴

Today, chlorpyrifos is still among the most common pesticides in the U.S.⁷⁵ Its primary use is for the control of foliage- and soil-borne insects in food and feed crops.⁷⁶ Approximately 10 million pounds of the chemical are applied annually in the U.S. in agricultural settings.⁷⁷ The EPA reports that the agricultural sector uses over 5 million pounds of chlorpyrifos annually in the production of corn alone.⁷⁸ However, the EPA's chlorpyrifos tolerances cover numerous other agricultural products as well, including soybeans, fruit trees, and citrus crops, and certain non-agricultural uses such as golf course maintenance and non-structural wood treatment.⁷⁹

Chlorpyrifos works by disrupting the nervous system of pests when they come in contact with the chemical.⁸⁰ Manufacturers can produce chlorpyrifos in numerous forms, including liquids, granular products, and flowable concentrates. Chlorpyrifos can be applied either using ground-based or aerial equipment.⁸¹ Once the chemical is introduced to the nervous system of an insect, acute poisoning suppresses a vital enzyme called cholinesterase.⁸² This process causes an overactivation of nerve impulses that eventually lead to death.⁸³

72. U.S. ENV'T PROT. AGENCY, *supra* note 70, at 3.

73. *Id.*

74. *Id.*

75. See Xindi Hu, *The Most Widely Used Pesticide, One Year Later*, SCI. NEWS, HARVARD UNIV. (Apr. 17, 2018), <http://sitn.hms.harvard.edu/flash/2018/widely-used-pesticide-one-year-later/> (stating Chlorpyrifos as the most widely used pesticide on crops because it is a highly effective pest-management tool).

76. U.S. ENV'T PROT. AGENCY, EPA-738-F-01-006, CHLORPYRIFOS FACTS 1 (2002), https://www3.epa.gov/pesticides/chem_search/reg_actions/reregistration/fs_PC-059101_1-Feb-02.pdf.

77. *Id.*

78. *Id.*

79. *Id.*; Hu, *supra* note 75.

80. See Hu, *supra* note 75 (mentioning that pesticide works by attacking insect nervous systems).

81. See U.S. ENV'T PROT. AGENCY, *supra* note 76, at 2 (mentioning concerns of exposure for humans from ground, arial, and water application).

82. See Joseph G. Allen, *This Pesticide is Closely Related to Nerve Agents Used in World War II. Trump's EPA Doesn't Care*, WASH. POST (July 25, 2019), <https://www.washingtonpost.com/opinions/2019/07/25/this-pesticide-is-closely-related-nerve-agents-used-world-war-ii-trumps-epa-doesnt-care/> (stating Acetylcholinesterase, or cholinesterase, serves the function of breaking down acetylcholine, a neurotransmitter); see also William C. Wagner, *Common Pesticide to be Pulled From Market*, 10 No. 7 IND. ENV'T COMPLIANCE UPDATE 3 (2000) (stating a buildup of acetylcholine causes an overactivation of its targets such as muscle fibers, sweat glands, the digestive system, and heart and brain cells).

83. U.S. ENV'T PROT. AGENCY, *supra* note 76, at 2.

Unfortunately, while chlorpyrifos is effective at controlling its target insects, it can also be very toxic to non-target insects, other wildlife, and humans.⁸⁴ A growing number of scientific studies have determined that chlorpyrifos exposure is highly toxic to humans, especially infants and children. Human exposure can occur through residues on food, contaminated drinking water, and toxic spray drift from pesticide applications.⁸⁵ Farmworkers are routinely exposed to the chemical when handling and applying the pesticide and when entering into fields where chlorpyrifos has recently been applied.⁸⁶ In adults, exposures to the chemical can cause nausea, dizziness, confusion, delayed nervous system damage, and potentially even death by suffocation due to loss of respiratory muscle control.⁸⁷

Initially, EPA “tolerances” or limits on chlorpyrifos concentrations and uses were determined based on the assumption that the pesticide would be safe as long as exposure levels were so low that they did not suppress the production of specific nervous system enzymes by 10% or more.⁸⁸ However, the EPA’s understanding of relevant chemical pathways at that point was primarily based on chlorpyrifos exposure studies involving adult animals.⁸⁹ These EPA assumptions failed to take into account the particular susceptibility of fetuses, infants, and children to the substance.⁹⁰ Numerous subsequent studies have concluded that pre- and post-natal exposure at levels that cause less than 10% enzyme inhibition still directly correlate with adverse brain development and cognitive impairments in children.⁹¹ The

84. See *Chlorpyrifos: General Fact Sheet*, NAT’L PESTICIDE INFO. CTR., OR. STATE UNIV. 1, 4 (2010), <https://npic.orst.edu/factsheets/chlorpge.pdf> (stating multiple ways humans, pets, and other animals are exposed).

85. See Virginia Rauh et al., *Impact of Prenatal Chlorpyrifos Exposure on Neurodevelopment in the First 3 Years of Life*, 118 PEDIATRICS e1845, e1856 (2006) (using magnetic resonance imaging concluded that neurodevelopmental effects observed in children exposed to chlorpyrifos persist until adolescence, suggesting that cognitive and motor impairments may be irreversible. Two other studies, conducted at the University of California-Berkeley and Mount Sinai School of Medicine and focused on organophosphate pesticides more generally, concluded that prenatal exposure to these types of pesticides is directly linked to significant and potentially irreversible adverse neurodevelopment); see also U.S. ENV’T PROT. AGENCY, *supra* note 76 (mentioning different manners of exposure for humans).

86. Hu, *supra* note 75.

87. Wagner, *supra* note 82.

88. Chlorpyrifos; Tolerance Revocations, 80 Fed. Reg. 69080, 69082 (Nov. 6, 2015) (to be codified at 40 C.F.R. pt. 180).

89. U.S. ENV’T PROT. AGENCY, EPA-HQ-OPP-2008-0850-0025, CHLORPYRIFOS: PRELIMINARY HUMAN HEALTH RISK ASSESSMENT FOR REGISTRATION REVIEW 2–3 (2011), <https://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OPP-2008-0850-0025&contentType=pdf>.

90. See NAT’L RSCH. COUNCIL, PESTICIDES IN THE DIETS OF CHILDREN AND INFANTS 77 (Nat’l Acad. Press 1993) (explaining that children frequently put their hands in their mouths and, relative to adults, consume more fruits and vegetables and drink more water and juice in proportion to their weight); see also Landrigan et al., *supra* note 12 (explaining common sources of pesticide exposure to children).

91. See Rauh et al., *supra* note 85, at e1846 (citing works suggesting irreversible impairment of children exposed to chlorpyrifos, and a causal link between parental exposure and child exposure).

EPA has been aware of these newer studies highlighting the inadequacy of the EPA's benchmark for chlorpyrifos tolerance since at least 2000.⁹²

1. History of Chlorpyrifos Regulation

In light of the mounting evidence that children and adults are susceptible to significant harms from pesticides and other toxic chemicals, President Clinton signed the Food Quality Protection Act (FQPA) into law in 1996.⁹³ The FQPA amended two existing acts, the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Federal Food Drug and Cosmetic Act (FFDCA), both of which directly affect chlorpyrifos regulation.⁹⁴ One stated purpose of the FQPA was to develop better methodologies and refine pesticide risk assessments to “better reflect real-world situations.”⁹⁵ These amendments fundamentally changed the EPA's regulation of pesticides.

a. The FFDCA

As amended in 1996, FFDCA required the EPA to reassess chlorpyrifos and all other currently registered pesticide tolerances.⁹⁶ Under the FFDCA, any food containing excessive pesticide residue is deemed unsafe and consequently barred from interstate commerce.⁹⁷ The Act gives the EPA limited authority to establish and adjust levels of pesticide “tolerances” in both raw agricultural commodities and processed foods.⁹⁸ Tolerance is a measure of the maximum residue of a pesticide permitted to remain on a food product.⁹⁹ Only food products containing pesticide residue levels that stay within set tolerance levels are permitted within interstate commerce.¹⁰⁰

Today, registered pesticides must satisfy the FQPA's new safety standard to be eligible for reregistration. Section 346a(b)(2) states that the

92. See generally OFF. OF PESTICIDE PROGRAMS, U.S. ENV'T PROT. AGENCY, HUMAN HEALTH RISK ASSESSMENT: CHLORPYRIFOS (2000), https://archive.epa.gov/scipoly/sap/meetings/web/pdf/hed_ra.pdf (conducting an overview of cumulative risk assessments of pesticides on human health).

93. *Summary of the Food Quality Protection Act*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/laws-regulations/summary-food-quality-protection-act> (last updated July 28, 2020).

94. *Id.*

95. *Id.*

96. *Id.*

97. 21 U.S.C. § 346a(a)(1).

98. 21 U.S.C. § 346a(a)(2).

99. *Pesticide Residue Monitoring Program Questions and Answers*, U.S. FOOD & DRUG ADMIN., <https://www.fda.gov/food/pesticides/pesticide-residue-monitoring-program-questions-and-answers> (last updated Sept. 15, 2020); see also Stephanie H. Jones, *Greater Than the Sum of its Parts: The Integration of Environmental Justice Advocacy and Economic Policy Analysis*, 26 N.Y.U. ENV'T L.J. 402, 433 (2018) (stating the EPA definition of tolerances).

100. 21 U.S.C. § 346a(l)(5).

EPA may leave in effect a tolerance of a currently registered pesticide if the EPA determines that the pesticide residue tolerance is “safe.”¹⁰¹ The statute defines “safe” as “a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue.”¹⁰² In establishing, modifying, leaving in effect, or revoking pesticide tolerances, the EPA must consider all “available” information concerning a pesticide’s toxic effects, human risks, dietary consumption patterns, cumulative effects, and aggregate exposure levels.¹⁰³ Under the FQPA, the EPA must also specifically take into account special considerations for infants and children.¹⁰⁴

The FQPA further established a schedule for review, requiring the EPA to reassess all currently registered pesticides.¹⁰⁵ In addition to this statutorily-mandated review process, the FFDCFA also allows any person to file a petition with the EPA to establish, modify, or revoke a tolerance or exemption for an existing pesticide chemical residue.¹⁰⁶

b. FIFRA

FIFRA, another federal statute affecting chlorpyrifos, requires that all pesticides sold in the U.S. pass through an EPA registration process.¹⁰⁷ Existing pesticide registrations are subject to intermittent review processes by the EPA; FIFRA requires that all registration reviews under the applicable safety standards be completed by the later of 15 years after the pesticide’s first registration date, or October 1, 2022.¹⁰⁸ The registration review process requires a finding by the EPA that the use of the pesticide will not cause

101. 21 U.S.C. § 346a(b)(2)(A)(ii).

102. 21 U.S.C. § 346a(b)(2)(A)(ii).

103. Chlorpyrifos; Tolerance Revocations, 80 Fed. Reg. at 69081.

104. Chlorpyrifos; Tolerance Revocations, 80 Fed. Reg. at 69081; 21 U.S.C. § 346a(b)(2)(C) (providing that the EPA must assess the risk to infants and children separately taking appropriate action based on “available information” about: (1) food consumption patterns; (2) increased susceptibility of infants and children; and (3) the cumulative effects on infants and children of pesticide residue and other chemical substances with a mechanism of toxicity. In addition, EPA is required to assess tolerance levels in children by applying an additional tenfold margin of safety, unless, based on reliable data, the EPA can conclude that a different margin of data is applicable to children).

105. See 21 U.S.C. § 346a(q) (stating EPA is required to review pesticide tolerances and exemptions in accordance with the following schedule provided in section 364a(q)(1): (A) 33 percent of tolerances and exemptions within 3 years of August 3, 1996; (B) 66 percent of tolerances within 6 years; and (C) 100 percent of tolerances within 10 years).

106. 21 U.S.C. § 346a(d) (providing of a list of requirements that a petition must meet and once the EPA determines that a proper petition has been filed, the EPA must publish notice of the petition complete with a summary within 30 days); see also 21 U.S.C. § 346a(d)(3)–(4) (mentioning that after notice has been published, the EPA “shall, after giving due consideration to a petition” take one of three actions provided for in section 346a(d)(4) that The EPA shall: (i) issue a final regulation; (ii) issue a proposed regulation on its own initiative and thereafter issue a final regulation; or (iii) deny the petition).

107. See 7 U.S.C. § 136a(c)(1) (describing the procedure for registration).

108. 7 U.S.C. § 136a(g)(1)(A)(iii).

“unreasonable adverse effects on the environment.”¹⁰⁹ This standard includes, among other requirements, human dietary risks from pesticide residues.¹¹⁰

2. History of Chlorpyrifos Registration and Residue Tolerances Review

In the late 1990s, after FQPA’s enactment and in light of new scientific research highlighting the health concerns associated with chlorpyrifos, the EPA began to limit its use even further.¹¹¹ In 1998, the EPA conducted its first registration review of chlorpyrifos, finding unreasonable risks associated with residential uses of the substance.¹¹² Accordingly, in 2000 the EPA executed an agreement with the registrants, Dow Chemical, banning most residential applications of chlorpyrifos.¹¹³ However, the EPA continued to allow the use of chlorpyrifos in agricultural settings.¹¹⁴

In 2001, the EPA issued an interim decision that allowed reregistration of existing chlorpyrifos uses and specified chlorpyrifos residue tolerances.¹¹⁵ However, the EPA required registrants seeking approval to implement “risk reduction measures.”¹¹⁶ Although the EPA approved most of the existing chlorpyrifos residue tolerances, the Agency did reduce tolerance levels for certain crops such as apples and grapes, and eliminated tolerances for tomatoes.¹¹⁷ Still, in spite of these changes, chlorpyrifos remained one of the most common pesticides used in the agricultural industry.¹¹⁸ A 2006 EPA memorandum perpetuated this approach, determining under a cumulative risk assessment that numerous pesticides, including chlorpyrifos, were eligible for reregistration and that established tolerance levels would remain unchanged.¹¹⁹

109. 7 U.S.C. § 136a(d)(3).

110. 7 U.S.C. § 136a(d)(3).

111. See *Chlorpyrifos*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/ingredients-used-pesticide-products/chlorpyrifos> (last updated Dec. 4, 2020) (mentioning the passage of the 1996 Food Quality Protection Act which set more stringent standards for chlorpyrifos).

112. See *id.* (stating chlorpyrifos has been undergoing registration review since 1965 and that the EPA identified the need to modify the standard of safety for chlorpyrifos to address health and environmental risks); U.S. ENV’T PROT. AGENCY, *supra* note 70.

113. Glenn Hess, *US EPA and Dow Agree to Ban on ‘Dursban’ Consumer Products*, INDEP. COMMODITY INTEL. SERV. (Aug. 6, 2000), <https://www.icis.com/explore/resources/news/2000/06/08/113949/us-epa-and-dow-agree-to-ban-on-dursban-consumer-products/>.

114. *In re Pesticide Action Network N. Am., Nat. Res. Def. Council v. U.S. Env’t Prot. Agency*, 798 F.3d 810, 811 (9th Cir. 2015).

115. See U.S. ENV’T PROT. AGENCY, *supra* note 70 (describing the interim decision).

116. *In re Pesticide Action Network*, 798 F.3d at 811.

117. *Id.* at 814.

118. *Id.*; Brief for Petitioners at 2, *League of Lat. Am. Citizens v. Wheeler*, 940 F.3d 1126 (9th Cir. 2019) (No. 17-71636) [hereinafter Brief for Petitioners].

119. FIFRA Scientific Advisory Panel (2008), *Scientific Issues Associated with Chlorpyrifos and PON1*, <https://www.regulations.gov/docketBrowser?rpp=50&po=0&D=EPA-HQ-OPP-2008-0274>.

Then, in 2007, the Pesticide Action Network North America and Natural Resource Council (PANNA) filed the first administrative petition against chlorpyrifos with the EPA.¹²⁰ The petition challenged the EPA's reregistration of the chemical and sought to revoke all chlorpyrifos residue tolerances.¹²¹ The EPA reasoned that while chlorpyrifos was unsafe for household use, its application in agricultural settings can continue.¹²² PANNA cited numerous human and epidemiological studies linking low levels of chlorpyrifos exposure to adverse neurodevelopmental effects on children.¹²³ The EPA's 2006 reregistration of chlorpyrifos had failed to include these studies in their risk assessment.¹²⁴

In response to the allegations in the petition, the EPA issued multiple assessments and proposed rules regarding the adverse effects of chlorpyrifos exposure from 2007 to 2016.¹²⁵ In those releases, the EPA repeatedly concluded that chlorpyrifos exposure was harmful to children's brain development, that damage occurred at tolerance levels below the existing tolerances, and that the Agency's current benchmark determining tolerances was insufficient.¹²⁶

120. *In re Pesticide Action Network*, 798 F.3d at 812.

121. *Id.* at 812.

122. *Id.* at 811.

123. See Esther Yu Hsi Lee, *Federal Appeals Court Won't Stop EPA From Using Controversial Pesticide*, THINK PROGRESS (last visited Jan. 18, 2019), <https://thinkprogress.org/chlorpyrifos-delay-upheld-6cc940d09379/>.

124. *In re Pesticide Action Network*, 798 F.3d at 814.

125. Brief for Petitioners, *supra* note 118, at 12–26; See ENVTL. PROT. AGENCY, *supra* note 111 (outlining the timeline of EPA actions around chlorpyrifos).

126. *In re Pesticide Action Network*, 798 F.3d., at 814; In 2008, the EPA's Health Effect's Division released a statement analyzing the effects of chlorpyrifos exposure recognizing the "growing body of literature on the effects of chlorpyrifos in the developing brain which indicate that gestational and early postnatal exposure can lead to neurochemical and behavioral alterations into adulthood." See Brief for the States of N.Y., Cal., Wash., Md., Vt., Or., Commonwealth Mass., and D.C. at 16–18, *League of Lat. Am. Citizens v. Wheeler*, 940 F.3d 1126 (9th Cir. 2019) (No. 19-71979 and No. 19071982) [hereinafter Brief for States]. The EPA noted that cholinesterase suppression and significantly lower levels than previously accounted for can cause these effects. *Id.* at 12–15. Later that same year, the EPA convened the FIFRA Scientific Advisory Panel. *Id.* 17–18. Between 2010 and 2012, the EPA continued to collect and analyze scientific studies linking early chlorpyrifos exposure to adverse health effects in children. *Id.* at 18–20. The panel reviewed and agreed with the earlier 2008 statement linking chlorpyrifos exposure to long term neurodevelopmental effects. *Id.* at 19–20; FIFRA, *supra* note 119. In 2011, the agency issued a Preliminary Human Health Risk Assessment highlighting the cholinesterase suppressing ability of chlorpyrifos. ENVTL. PROT. AGENCY, DP No. D388070, CHLORPYRIFOS PRELIMINARY HUMAN HEALTH RISK ASSESSMENT 8 (2011), <https://www.regulations.gov/document?D=EPA-HQ-OPP-2008-0850-0025>. In this assessment the EPA cited numerous epidemiological studies and requested peer-review from the scientific advisory panel (SAP). *Id.* at 29–34. In 2012, the SAP determined that further inquiry is necessary, acknowledging the vast array of evidence suggesting "chlorpyrifos can affect neurodevelopment at levels lower than those associated with cholinesterase inhibition." Brief for States, *supra* note 126, at 19; See U.S. Env'tl. Prot. Agency, *SAP Minutes No. 2012-04* (2012), <https://www.epa.gov/sites/production/files/2015-06/documents/041012minutes.pdf> (illustrating that the panel also noted that the overall evidence across all of these studies is persuasive in indicating that low levels of exposure to chlorpyrifos can have adverse effects on neurodevelopment).

The EPA also expressed increasing concerns about chlorpyrifos in a 2014 Revised Human Health Risk Assessment.¹²⁷ In this revised assessment, the EPA determined that “chlorpyrifos likely played a role” in developmental delays observed in a recent Columbia University study.¹²⁸ This study confirmed adverse effects on brain development in children at exposure rates lower than 10% cholinesterase enzyme inhibition.¹²⁹ The Agency likewise expanded and updated its review of a University of California-Berkley and Mount Sinai School of Medicine studies of the substance.¹³⁰ The EPA noted that all three epidemiological studies were “strong studies” that support the conclusion that “chlorpyrifos played a role in these outcomes.”¹³¹

In 2015, the Ninth Circuit Court of Appeals ordered the EPA to respond to PANNA’s petition by revoking all chlorpyrifos tolerances or by issuing a proposed or final tolerance revocation.¹³² Based on its newly revised risk assessment and this judicial order, the EPA finally announced a proposal to ban chlorpyrifos in 2015.¹³³ The Agency stated it was unable to “conclude that the risk from aggregate exposure from the use of chlorpyrifos meets the safety standard” of the FFDCA.¹³⁴

The EPA’s proposal to ban chlorpyrifos unsurprisingly provoked strong opposition from Dow AgroSciences, which continues even now to advocate for chlorpyrifos and to assert its safety.¹³⁵ Dow argued that the Ninth Circuit had rushed the EPA to act before all scientific analyses were complete and that the EPA’s methodology for quantifying the risk posed by chlorpyrifos was inaccurate.¹³⁶ Despite these objections, the Obama EPA had remained firm in its decision to revoke all tolerances for the pesticide.¹³⁷ In November 2016, the EPA concluded that while “uncertainties” remained, numerous scientific studies provided sufficient evidence linking chlorpyrifos exposure

127. U.S. ENVTL. PROT. AGENCY, D424485, CHLORPYRIFOS HUMAN HEALTH RISK ASSESSMENT (2014).

128. *Id.* at 6.

129. Rauh et al., *supra* note 91, at e1849.

130. Brief for States, *supra* note 126, at 21 (“EPA also expanded and updated its review of the three independent human epidemiological studies, all of which remained ongoing and now provided additional data.”).strong

131. *Id.* at 21.

132. *In re Pesticide Action Network N. Am., Nat. Res. Def. Council, Inc.*, 798 F.3d 809, 813 (9th Cir. 2015).

133. Chlorpyrifos; Tolerance Revocations, 80 Fed. Reg. 69,080 (proposed Nov. 6, 2015) (to be codified at 40 C.F.R. pt. 180); *See* Friedman, *supra* note 13 (describing EPA’s proposal banning chlorpyrifos).

134. Chlorpyrifos; Tolerance Revocations, *supra* note 133, at 69,080.

135. Hess, *supra* note 113; Britt E. Erikson, *U.S. EPA’s Chlorpyrifos Decision Spurs Pushback*, C&EN (Sept. 11, 2017), <https://cen.acs.org/articles/95/i36/US-EPAs-chlorpyrifos-decision-spurs.html>.

136. *See* Dan Charles, *EPA Decides Not to Ban a Pesticide, Despite its Own Evidence of Risk*, NPR (Mar. 29, 2017), <https://www.npr.org/sections/thesalt/2017/03/29/521898976/will-the-epa-reject-a-pesticide-or-its-own-scientific-evidence> (describing Dow Agrosciences’s position on the scientific methods the EPA used).

137. Brief for States, *supra* note 126, at 27.

to adverse neurodevelopmental effects in children to warrant an outright ban.¹³⁸

II. RECENT DEVELOPMENTS IN TOXICS REGULATION

Federal toxics regulators, who for years had gradually strengthened protections for citizens based on advancing scientific knowledge of health risks, have charted a quite different course in recent years under President Donald Trump. During his presidential campaign, President Trump boldly declared, “we’re going to get rid of the regulations that are just destroying us.”¹³⁹ In the two years after Trump’s inauguration as president, his administration has sought to fulfill this promise, overseeing approximately 514 deregulatory rulemakings on a broad range of policy issues.¹⁴⁰ The EPA’s enduring efforts to curb asbestos and chlorpyrifos use and exposure have been among those targeted in this effort.¹⁴¹ Unfortunately, the provisions of the TSCA offer relatively weak insulation against this type of executive-branch-driven crusade to roll back safeguards against hazardous chemicals. The following subsections describe how certain shortcomings of the amended TSCA have enabled the Trump EPA to easily loosen asbestos and chlorpyrifos regulations.

A. Problems with the TSCA

The TSCA has proven to be a vulnerable and easily manipulated structure for governing toxic substance uses within the U.S. Prior to TSCA’s enactment in 1976, roughly 62,000 chemicals circulated in U.S. commerce.¹⁴² After its enactment, all substances then on the market were permitted to remain unless the EPA determined they posed an “unreasonable risk.”¹⁴³ Of the couple hundred chemicals the EPA evaluated pursuant to the

138. *Id.* at 26–27.

139. Howard Richman, *Trump: We’re Going to Get Rid of the Regulations That are Just Destroying Us*, AM. THINKER (Sept. 16, 2015), https://www.americanthinker.com/blog/2015/09/trump_were_going_to_get_riid_of_the_regulations_that_are_just_destroying_us.html#ixzz6F7sPjWC4 (describing President Trump’s pre-election speech about regulations).

140. KEITH BELTON & JOHN GRAHAM, AM. COUNCIL CAP. FORMATION, TRUMP’S DEREGULATORY RECORD: AN ASSESSMENT AT THE TWO-YEAR MARK 5 (2019), http://accf.org/wp-content/uploads/2019/03/ACCF-Report_Trump-Deregulatory-Record-FINAL.pdf.

141. *See* Friedman, *supra* note 13 (comparing Presidents Trump and Obama’s EPA’s differing stances on regulation).

142. *See* Puneet Kollipara, *The Bizarre Way the U.S. Regulates Chemicals — Letting Them on The Market First, Then Maybe Studying Them*, WASH. POST, (Mar. 19, 2015), <https://www.washingtonpost.com/news/energy-environment/wp/2015/03/19/our-broken-congress-latest-effort-to-fix-our-broken-toxic-chemicals-law/> (explaining the purposes and shortcomings of the TSCA).

143. *Id.*

statute, only five were deemed to pose an “unreasonable risk” and subsequently banned.¹⁴⁴ Nearly all other chemicals remained on the market, partly because TSCA gives the EPA only 90 days to make an “unreasonable risk” assessment.¹⁴⁵ Within this short window of time, the Agency rarely has enough time to assemble and analyze the data required to make a thorough finding.¹⁴⁶ On this basis, critics of TSCA have argued that its “unreasonable risk” standard is an overly stringent and difficult bar for the EPA to meet.¹⁴⁷

More importantly, the amended TSCA gives the EPA broad discretion to regulate toxic substances, making this area of regulation more susceptible to industry influence. The original TSCA enabled the EPA to require interested parties to notify the Agency if they intended to manufacture or import an article containing a chemical of concern.¹⁴⁸ The purpose of this notification requirement was to prevent an unanticipated or new use of a chemical from proliferating and harming the public.¹⁴⁹ Under the amended TSCA, the EPA must undergo formal rulemaking to compel a chemical manufacturer to conduct research and produce new relevant data assessing the safety and risks of the chemical of concern.¹⁵⁰ Formal rulemaking is an administratively laborious and time-consuming process that could take years.¹⁵¹ This

144. *Id.*

145. Toxic Substances Control Act, 15 U.S.C. § 2605 (1976); *Regulatory Determinations Made Under Section 5 of the Toxic Substances Control Act (TSCA)*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/reviewing-new-chemicals-under-toxic-substances-control-act-tsca/regulatory-determinations-made-under> (last visited Jan. 18, 2021).

146. Kollipara, *supra* note 142.

147. *Title 1 of the Toxic Substances Control Act; Understanding Its History and Reviewing Its Impact: Hearing Before the H. Comm. On Energy and Commerce* (2013) (statement of Daniel Rosenberg, Senior Attorney, Natural Resources Defense Council); *See Corrosion Proof Fittings v. E.P.A.*, 947 F.2d at 1214 (“The test “imposes a considerable burden on the agency and limits its discretion in arriving at a factual predicate. *Mobil Oil Corp. v. FPC*, 483 F.2d 1238, 1258 (D.C.Cir.1973).”); The Fifth Circuit Court of Appeals invalidated the EPA’s finding that asbestos-containing products posed an “unreasonable risk” because the EPA failed to consider the “least burdensome” way to regulate the hazardous substance. *Id.* at 1215–16. Regardless of its extremely dangerous nature, asbestos minerals and asbestos-containing products have not been banned since. *EPA Actions to Protect the Public*, *supra* note 25.

148. Joel Reynolds, *The Toxic Substances Control Act of 1976: An Introductory Background and Analysis*, 4 COLUM. J. ENVTL. L. 35, 83 (1977) (explaining Section 8, subsection (e) of the Toxic Substances Control Act of 1976).

149. *Id.*

150. *See Risk Evaluations for Existing Chemicals Under TSCA*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/assessing-and-managing-chemicals-under-tsca/risk-evaluations-existing-chemicals-under-tsca> (last visited Jan. 18, 2021) (explaining the process of EPA’s risk evaluation for chemicals under the TSCA, as amended). The provisions of the amended TSCA provide the Agency with a more straightforward mechanism to require toxicity data. Frank R. Lautenberg Chemical Safety for the 21st Century Act § 3A, 15 U.S.C. § 2603 (2015). If a chemical raises a “red flag” during the “tiered testing” screening process, the EPA may initiate extensive research and testing if the Administrator judges it is necessary. 15 U.S.C. § 2603(a)(2).

151. Watnick, *supra* note 4, at 386; *See also* Major Colin P. Eichenberger, *Improving the Toxic Substances Control Act: A Precautionary Approach to Toxic Chemical Regulation*, 72 A.F. L. REV. 123, 133 (2015) (stating that TSCA requires EPA to engage in formal rulemaking, which is time consuming);

approach opens the door more widely for industry stakeholders to argue that uses of known dangerous chemicals should nonetheless be permitted because of their alleged economic importance.

B. Criticisms of the April 2019 SNUR

Although the EPA's April 2019 SNUR addressed some of the shortcomings of its 2018 ruling on asbestos, critics point out that this final rule does not outright ban many obsolete uses subject to the SNUR and thus leaves the door open for these dangerous uses to reemerge in the U.S.¹⁵² Indeed, as critics have emphasized, the SNUR only requires notification to the EPA before these uses are introduced or reintroduced into commerce.¹⁵³ And under the promulgated rule, the EPA can altogether choose not to act when a manufacturer or importer provides the required notice.¹⁵⁴ Accordingly, the April 2019 SNUR provides no certainty as to whether the EPA will restrict any of these formerly banned uses. In fact, the Trump EPA's track record of seemingly ignoring scientific evidence about potentially serious health risks bolsters the risk that at least *some* such uses could reappear.¹⁵⁵

Another criticism of the April 2019 SNUR is that it fails to cover discontinued uses of asbestos in the EPA's ongoing risk evaluation.¹⁵⁶ The fact that the SNUR does not require the Agency to evaluate the risks of obsolete products creates an opportunity for corporations to exploit this gap and seek to reintroduce those uses. Now, any asbestos use that is not found

See Gerry, *supra* note 63 (noting the EPA has spent 10 years and millions of dollars on asbestos research); This analytical burden proved to be fatal in 1991 when the Fifth Circuit Court of Appeals ruled against the Agency in its attempt to regulate asbestos. *See Corrosion Proof Fitting*, 947 F.2d at 1226 (holding the EPA failed to find the "least burdensome" restriction on the industry because it did not consider every conceivable way to regulate the mineral).

152. Pasheilich, *supra* note 5.

153. *Id.*; The EPA states that under the final rule the, "EPA is focused on protecting the public from exposure to asbestos, and as such persons may not undertake any of these activities; they are required to notify EPA at least 90 days before commencing any manufacturing (including importing) or processing of asbestos (including as part of an article) for significant new use may not commence until EPA has conducted a review of the notice, made an appropriate determination on the notice, and taken such actions as are required in association with that determination." Restrictions on Discontinued Uses of Asbestos; Significant New Use Rule, 84 Fed. Reg. 17345, 17346 (pre-publication notice April 17, 2019) (to be codified at 40 C.F.R. pt. 9 and pt. 721)., https://www.epa.gov/sites/production/files/2019-04/documents/prepubcopy_9991-33_19t-0042_fr_document_2019-04-17.pdf.

154. *Ten Ways EPA's Significant New Use Rule for Asbestos Fails to Protect the Public from Asbestos*, ASBESTOS DISEASE AWARENESS ORG.: BLOG, EDUC., FED., LEGISLATION (Apr. 17, 2019), <https://www.asbestosdiseaseawareness.org/newsroom/blogs/8-ways-epas-significant-new-use-rule-for-asbestos-fails-to-protect-the-public-from-asbestos>.

155. Earthjustice et. al, Comment Letter on Premanufacture Notices Identified in Certain New Chemicals: Receipt and Status Information for July 2019 (Oct. 7, 2019), <https://beta.regulations.gov/comment/EPA-HQ-OPPT-2019-0075-0013>.

156. ASBESTOS DISEASE AWARENESS ORG., *supra* note 154.

by the current EPA to pose an “unreasonable risk” may be brought into the market soon after a manufacturer provides notice.

The April 2019 SNUR likewise does not adequately address the treatment of imported asbestos-containing products¹⁵⁷ Since these substances and products are not within the scope of the SNUR, importers can continue to bring them into the U.S. unrestricted.¹⁵⁸ For example, asbestos-containing products such as asbestos cement and woven fabric are currently imported into the U.S.; this regulatory loophole may allow these products and more to be exempt from a possible ban.¹⁵⁹ The SNUR also does not address other forms of asbestos besides the six recognized by the Asbestos Hazard Emergency Response Act (AHERA) of 1986 that are hazardous to human health.¹⁶⁰

C. The EPA’s Recent Refusal to Ban Chlorpyrifos

The Trump EPA has similarly refused to ban uses of the chemical chlorpyrifos despite clear evidence that the pesticide causes long term damage to children’s brains.¹⁶¹ As described above, regulatory efforts to remove chlorpyrifos from the market have been ongoing for over a decade.¹⁶² These efforts had nearly culminated in success in 2016 when the Obama EPA acknowledged the risks of the pesticide and proposed an outright ban.¹⁶³

However, on March 29, 2017, President Trump’s appointed EPA Administrator, Scott Pruitt, abruptly reversed the Agency’s position on chlorpyrifos.¹⁶⁴ Under Pruitt, the EPA proposed a rule stating that scientific research would not be accepted unless the raw data behind it was made public.¹⁶⁵ However, many scientists have noted that studies measuring human exposure to chlorpyrifos and other toxic chemicals often rely on confidential health information, and that the proposed rule restricted the Agency’s ability to regulate such chemicals.¹⁶⁶

157. *Id.*

158. *Id.*

159. *Id.*

160. *Id.*

161. See Rebecca Beitsch, *Six States Sue EPA Over Pesticide Tied to Brain Damage*, HILL (Aug. 7, 2019), <https://thehill.com/policy/energy-environment/456560-epa-sued-over-decision-to-allow-use-of-pesticide-tied-to-brain> (stating that several states have sued EPA over their lack of action to ban chlorpyrifos) (“The EPA is egregiously sacrificing our children’s health by refusing to make a determination on this dangerous pesticide.”).

162. See discussion *infra* Part I, Section D.1 (discussing the history of chlorpyrifos regulation).

163. See McGarity & Wagner, *supra* note 11, at 1738 (describing the actions of the EPA under the Obama administration).

164. Beitsch, *supra* note 161; Valerie Volcovici, *Trump EPA Allows Use of Controversial Pesticide*, REUTERS (July 18, 2019), <https://www.reuters.com/article/usa-epa-pesticide/trump-epa-allows-use-of-controversial-pesticide-idUSL2N24J1SO>.

165. Friedman, *supra* note 13.

166. *Id.*

More recently, the EPA has been named a defendant in several lawsuits because of subsequently-appointed EPA Administrator, Andrew Wheeler's rejection of a petition to revoke all tolerances for chlorpyrifos.¹⁶⁷ In October 2019, the League of United Latin American Citizens (LULAC) and several other environmental and civil rights activist groups sued the EPA with regard to these issues.¹⁶⁸ New York, Maryland, Vermont, Washington, California, Hawaii, Massachusetts, and the District of Columbia filed a separate lawsuit against the EPA. The Ninth Circuit of Appeals ultimately consolidated both cases.¹⁶⁹ The Petitioners asserted, without an affirmative finding of safety, the EPA's final order to leave chlorpyrifos tolerances unchanged violates the FFDCa and must be set aside.¹⁷⁰

Frustrated by the EPA's inactions, several state governments have recently enacted or proposed their own laws or regulations to ban chlorpyrifos use within their borders.¹⁷¹ In 2018, Hawaii became the first state to enact a prohibition against chlorpyrifos, though it will not take effect until 2022.¹⁷² California regulators have also announced plans to ban the sale of chlorpyrifos by 2020.¹⁷³ Corteva AgriScience, formerly DowDuPont, agreed that sales of chlorpyrifos in California would end by February 6, 2020, and that state agricultural growers would not be allowed to possess or use the pesticide after December 31, 2020.¹⁷⁴ New York lawmakers have recently approved a plan to ban the pesticide by 2021.¹⁷⁵ Several states such as Oregon, Connecticut, and New Jersey have also proposed bills to take chlorpyrifos off the market.¹⁷⁶

167. Volcovici, *supra* note 164 (noting the Ninth Circuit Court of Appeals ruled that the EPA had to decide whether to reverse Pruitt's overturn of the ban on chlorpyrifos).

168. *See League of United Latin Am. Citizens*, 940 F.3d at 1127 (ordering the consolidation of cases challenging the EPA's 2017 order denying a 2007 petition to revoke all tolerances for the pesticide chlorpyrifos).

169. *Id.*

170. *Id.*

171. Brady Dennis & Juliet Eilperin, *California to Ban Controversial Pesticide, Citing Effects on Child Brain Development*, WASH. POST (May 8, 2019), <https://www.washingtonpost.com/climate-environment/2019/05/08/62alifornia-ban-controversial-pesticide-citing-effect-child-brain-development/>.

172. *Id.*; Dominique Mosbergen, *Hawaii Becomes First State to Ban Widely-Used Pesticide Found to be Harmful to Kids*, HUFFPOST (June 14, 2018), https://www.huffpost.com/entry/chlorpyrifos-ban-hawaii-pesticide_n_5b21fd3ee4b09d7a3d7a2fd9.

173. Dennis & Eilperin, *supra* note 171; Richard Gonzalez, *California Bans Popular Pesticide Linked to Brain Damage in Children*, NPR (Oct. 9, 2019), <https://www.npr.org/2019/10/09/768795666/california-bans-popular-pesticide-linked-to-brain-damage-in-children>.

174. *Id.*

175. Dennis & Eilperin, *supra* note 171.

176. *Id.*

III. THEORETICAL PERSPECTIVE ON FEDERAL TOXICS REGULATION

As demonstrated by the recent actions of the Trump administration, stronger safeguards are needed to protect toxic substance regulation from short-term special interests. As described above, the Trump EPA has already undone many Obama-era policies aimed at eliminating known toxic substances such as asbestos and chlorpyrifos, threatening to allow the reintroduction of some uses of such substances within the U.S.¹⁷⁷ Here, Part III examines the basic policy rationales behind the nation's current toxic substance regulatory regime and makes a case for erecting stronger safeguards to better protect the long-term welfare of the nation from the short-sighted rollbacks of toxics laws.

The EPA has a specific charge to protect human health and the environment. One way the Agency helps to do that is by ensuring the safety of chemicals used within the country.¹⁷⁸ Unfortunately, unless they are sufficiently constrained, EPA officials may sometimes succumb to pressure, focusing too heavily on short-term economic gain or private special interests in their regulation of toxic substances and not enough on health, the environment, or long-term costs. The following materials explain how the government's role in toxic substance regulation is inherently different from other types of executive duties and thus requires special protection. Certain principles of public choice theory and behavioral economics support introducing special restrictions on presidential power to protect toxic substance regulation.

A. *Public Choice Theory*

Examining the Trump administration's deregulatory stance on toxic substances through the lens of public choice theory provides additional insight into its motivations and into potential ways of addressing deficiencies in the existing federal regulatory structure. Public choice theory seeks to increase humans' understanding of the behavior of public officials and government actors in the political arena.¹⁷⁹ Public choice analysis adopts a

177. See discussion *infra* Part II, Section C (explaining EPA's reversal of the ban and its effect on the potential for hazardous product reintroduction into the U.S. market); Friedman, *supra* note 13; Volcovici, *supra* note 164.

178. *Returning EPA to Its Core Mission*, U.S. ENVTL. PROT. AGENCY, <https://www.epa.gov/home/returning-epa-its-core-mission> (last visited Sept. 6, 2020); See also Laurie Kazan-Allen, *Asbestos Intransigence*, INT'L BAN ASBESTOS SECRETARIAT (Aug. 6, 2018), <http://ibasecretariat.org/lka-asbestos-intransigence.php> (noting that the U.S. chlorine industry releases 300 plus tons of solid asbestos waste annually).

179. See Michael C. Blumm, *Public Choice Theory and The Public Lands: Why "Multiple Use" Failed*, 18 HARV. ENVTL. L. REV. 405, 417 (1994) (noting most public choice theory has focused on the legislatures while this article examines land management agencies).

more critical view of democratic policymaking; generally assuming that government actors tend to act in their own rational self-interest rather than to seek to understand and loyally pursue the predominant interests of their constituents.¹⁸⁰ Public choice theory is arguably useful in the context of toxics regulation because it provides an accurate description of certain challenges affecting current policymaking in this important policy area. Section III, A applies basic public choice theory concepts to highlight some possible explanations for the Trump EPA's aggressive deregulation of toxic substances.

1. Concentrated Private Interests

Public choice theory's literature relating to special interests provides a useful perspective on the challenges facing toxic substance regulation. This literature describes in detail how a relatively small number of private stakeholders can be motivated and empowered to exert undue influence on legislative and regulatory processes.¹⁸¹

Some types of legislation create benefits that are heavily concentrated on a few private stakeholders, while spreading the costs of such legislation thinly across the citizenry.¹⁸² This contrast between concentrated benefits and diffused costs can create an unequal dynamic within the political sphere. Concentrated beneficiaries have potentially a great deal to gain and thus are more likely and able to organize to lobby or expend resources to ensure the passage or failure of legislation in their favor.¹⁸³ Noted public choice economist James Gwartney describes this special interest effect as follows:

There will be a strong tendency for politicians to support positions favored by well-organized, easily identifiable special interest groups. When the cost of special interest legislation is spread widely among the voting populace, most non-special interest voters will largely ignore the issue. ... In contrast, special interest voters...will let candidates (and legislators) know how strongly they feel about the issue. ... Given the intensity of special interest voters and the apathy of other voters, politicians will be led as if by an "invisible hand" to promote the positions of special interests.¹⁸⁴

180. William Dubinsky, *Law and Public Choice: A Critical Introduction*, 90 MICH. L. REV. 1152, 1513 (1992).

181. Todd R. Overman, *Shame on You: Campaign Finance Reform through Social Norms*, 55 VAND. L. REV. 1243, 1250 (2002).

182. Alicia Constant, *A Matter of Incentives: Public Choice and the Great Fiction*, INDEPENDENT (Sept. 23, 2010), <https://www.independent.org/students/essay/essay.asp?id=2891>.

183. *Id.*

184. JAMES GWARTNEY, PRIVATE PROPERTY FREEDOM AND THE WEST 39-40 (1985).

In contrast, the broader citizenry that bears most of the costs of such legislation faces entirely different incentives.

Generally, even when the aggregated costs of enacting the legislation at issue are comparatively high, they are spread so thinly across the population that they are hardly felt by most individuals.¹⁸⁵ As a result, the cost bearers of the new legislation have little incentive to organize and actively oppose it.¹⁸⁶ Most citizens residing in this camp are rationally ignorant of the entire process.¹⁸⁷ For obvious reasons, this dynamic tends to favor the concentrated interests, who tend to be more successful in influencing government decisions.

2. Political Rent-Seeking and Federal Toxic Substances Regulation

There is significant evidence suggesting that private stakeholders with concentrated interests have sought to influence the regulation of toxic substances like asbestos and chlorpyrifos in the U.S. through various political rent-seeking strategies. Rent-seeking behavior refers to private stakeholders' actions aimed at increasing wealth, not through productive means, but through exerting influence on government officials to redistribute wealth to those stakeholders.¹⁸⁸ Rent-seeking leads to the disbursement of gains and losses through political competition but generally creates no societal value.¹⁸⁹ Instead, it is a means for private parties to exploit positions of power in their favor.¹⁹⁰ The Trump administration's deregulation of environmental and health and safety protections is arguably an example of such political rent-seeking.

Over 300 tons of asbestos waste are dumped into U.S. landfills each year, and the primary parties responsible for this disposal are large corporations such as Occidental Chemical Corporation (Occidental), Dow Chemical (Dow), and Olin Corporation (Olin).¹⁹¹ Olin (which purchased all of Dow's chlor-alkali and vinyl plants worldwide in 2015) and Occidental are two of the largest chlorine producers in the Americas, and both utilize asbestos diaphragm technology for the majority of their operations.¹⁹² About 75% of Occidental's chlorine is produced using asbestos technology. Combined,

185. Constant, *supra* note 182.

186. *Id.*

187. *Id.*

188. Blumm, *supra* note 179, at 416–17.

189. Andrew P. Morriss, *Real People, Real Resources, And Real Choices: The Case for Market Valuation of Water*, 38 TEX. TECH L. REV. 973, 993 (2006).

190. Larry E. Ribstein, *Corporate Political Speech*, 49 WASH. & LEE L. REV. 109, 152–53 (1992).

191. Kazan-Allen, *supra* note 178.

192. *Id.*

Occidental and Olin own approximately 83% of asbestos diaphragm chlorine capacity in the Americas.¹⁹³ Incidents of asbestos pollution by three Occidental plants located in Texas and Louisiana and one facility owned by Westlake Chemical in Louisiana are well-documented.¹⁹⁴

Occidental and Olin are members of the American Chemistry Council (ACC), a trade association that represents the interests of American chemical industries.¹⁹⁵ In 2017, EPA personnel met with representatives of chlorine producers, including Occidental, Olin, and the ACC, on several occasions to discuss EPA regulations regarding asbestos.¹⁹⁶ Nancy B. Beck, who was an executive for the ACC from 2012 to 2017, was appointed as Deputy Assistant Administrator of the EPA's Office of Chemical Safety and Pollution Prevention in May 2017.¹⁹⁷ Dr. Beck's appointment to the EPA most likely facilitated access between the chemical industry and the EPA's decision-makers regarding the regulation of asbestos in the U.S. market.¹⁹⁸

In the case of chlorpyrifos and Corteva AgriScience, circumstantial evidence from the period leading up to the EPA's decision to continue to allow chlorpyrifos use is highly suggestive. Dow Chemical donated \$1 million to help fund President Trump's inaugural activities, and its CEO and chairman, Andrew Liveris, was a key advisor to the Trump administration.¹⁹⁹ Dow had also spent over "\$13.6 million on lobbying in 2016 and spent over \$5.2 million in the first quarter of 2017" alone; petitioning the EPA, White House, and both chambers of Congress for numerous policies, including loosened regulations on chlorpyrifos.²⁰⁰ In August 2017, then EPA Administrator Scott Pruitt met with Dow DuPont on dozens of occasions prior to the Agency's 2016 decision to revoke the proposed ban on chlorpyrifos.²⁰¹ Pruitt's chief of staff Ryan Jackson finally said in an email that he had "scare[d]" other staff members into going along with the decision

193. *Id.*

194. *Id.*

195. *Id.*

196. *Id.*

197. Eric Lipton, *Why Has the E.P.A. Shifted on Toxic Chemicals? An Industry Insider Helps Call the Shots*, N.Y. TIMES (Oct. 21, 2017), <https://www.nytimes.com/2017/10/21/us/trump-epa-chemicals-regulations.html>.

198. *Id.*

199. See *How Dow Chemical Influenced the EPA to Ignore the Scientific Evidence on Chlorpyrifos*, UNION OF CONCERNED SCIENTISTS, (Oct. 11, 2017), <https://www.ucsusa.org/ignoring-scientific-evidence-dangerous-pesticide-chlorpyrifos> (discussing Dow Chemical's involvement in the EPA's decision about chlorpyrifos).

200. *Id.*

201. Michael Biesecker, Associated Press, *Scott Pruitt, Trump's EPA Chief Met With Dow Chemical Exec Before Rolling Back a Ban on Pesticides*, BUS. INSIDER (Jun. 28, 2017), <https://www.businessinsider.com/scott-pruitt-trumps-epa-chief-met-with-dow-chemical-exec-before-rolling-back-a-ban-on-pesticides-2017-6>; See also Associated Press, *Correction: EPA-Dow Chemical Story*, AP NEWS (July 3, 2017), <https://apnews.com/article/2350d7be5e24469ab445089bf663cdcb> (explaining a correction to the AP's previous story on Administrator Pruitt's meeting).

to revoke the ban, adding “they know where this is headed and they are documenting it well.”²⁰²

3. Overly Broad Delegation of Authority

The difficulties that TSCA and its amendments have faced in preventing the erosion of federal toxic substance restrictions in the U.S. are more clearly visible when viewed through the lens of public choice theory. At first glance, TSCA and LCSA should seemingly be capable of ensuring adequate long-term protection against highly toxic substances such as asbestos. However, the language of these statutes and the regulations adopted pursuant to them delegates significant discretion to federal regulators, making it easier for regulators to succumb to the pressures of private stakeholders. Congress may have even preferred such vague regulatory language because of its capacity to balance the pressure from the public to increase chemical safety against countervailing pressures from powerful industry stakeholders.

Public choice theory emphasizes the notion that self-interested legislators are motivated primarily by their desires for reelection.²⁰³ As such, rationally self-interested legislators seek a balance between appeasing important private stakeholders and retaining support from voters with opposing views. In some instances, politicians may seek to pursue that balance by voting in favor of restrictive legislation favored by a majority of voters; yet building enough loose discretionary language into that legislation to empower federal agencies to appease the interests of private stakeholders with concentrated interests.²⁰⁴

It is at least conceivable that TSCA and LCSA are examples of legislation designed to give the impression of advancing broader public interests yet preserve sufficient discretion to allow regulators to do otherwise.²⁰⁵ The TSCA and LCSA were championed as tools to regulate harmful substances and thereby limit human exposure through food, air, cosmetics, drinking water or other means. However, the statutes are loosely drafted and give broad discretion to the EPA and create ways for the agency to justify under-enforcement. For instance, the TSCA forbids the EPA from requiring testing of a chemical without adequate data, yet the EPA cannot request such data from industry stakeholders unless there are reasons to

202. Eric Lipton & Roni Caryn Rabin, *E.P.A. Promise ‘a New Day’ for the Agriculture Industry, Documents Reveal*, N.Y. TIMES (Aug. 18, 2017), <https://www.nytimes.com/2017/08/18/us/politics/epa-agriculture-industry.html>.

203. Dubinsky, *supra* note 180, at 1513.

204. *Id.*

205. See Jim Rossi, *Public Choice Theory and the Fragmented Web of the Contemporary Administrative State*, 96 MICH. L. REV. 1746, 1760–62 (1998) (discussing the use of public choice tools, comparing the administrative agencies to the legislature).

believe chemical presents a risk to public health or environment—a difficult claim to make without data.²⁰⁶ This circular requirement structure has resulted in required testing for only 200 chemicals out of more than 80,000 currently in the TSCA inventory.²⁰⁷

The EPA's challenges in restricting chlorpyrifos can also be partly explained with similar public choice concepts. Like asbestos use restrictions, federally allowed pesticide tolerances are subject to registration and review by the EPA.²⁰⁸ The FFDC and FIFRA purport to be public health and environmental protection statutes with seemingly high health standards and measures for public petitions. However, the statutes as drafted give the EPA broad authority to determine whether to revoke tolerance or keep them in place.

B. Myopic Policymaking

Myopic behavior also seems to plague much of environmental policymaking, including toxic substance regulation. Behavioral economics describes myopic behavior as behavior that “seek[s] short-term profit regardless of long-term consequences.”²⁰⁹ Myopic behavior is commonly evident in the context of a publicly-traded company. Market pressures and the short-sighted demands of shareholders can sometimes cause decisionmakers and managers in such companies to over aggressively pursue short-term gains.²¹⁰ Many experts assert that shareholders with short-term horizons play a large role in causing public companies' myopic behavior.²¹¹ Short-term shareholders anticipate selling their shares in the near future and want to reap the highest possible price.²¹² When markets do not fully incorporate companies' long-term prospects into share prices, short-term shareholders may pressure firms to take actions that maximize stock value in the short-term, even when doing so is detrimental to a company's long-term value.²¹³

206. Watnick, *supra* note 4, at 385.

207. *Id.*

208. See generally *About Pesticide Tolerances*, ENVTL. PROT. AGENCY (last updated Sept. 16, 2016), <https://www.epa.gov/pesticide-tolerances/about-pesticide-tolerances> (explaining EPA's process for establishing pesticide tolerances) (last visited Jan. 18, 2021).

209. Lynne L. Dallas, *Short-Termism, the Financial Crisis, and Corporate Governance*, 37 J. CORP. L. 265, 267 (2012).

210. See Lynne L. Dallas & Jordan M. Barry, *Long-Term Shareholders and Time-Phased Voting*, 40 DEL. J. CORP. L. 541, 546–47 (2016) (investigating Time-Phased Voting as a potential remedy for perceived corporate myopia).

211. *Id.*

212. *Id.*

213. *Id.*

Myopic behavior is also arguably visible in the current EPA's emphasis on deregulating uses of chemical substances. Like managers of publicly traded corporations, elected officials generally focus much of their attention on satisfying the short-term interests of their constituents and industry supporters and less on policies that are likely to generate long-term positive outcomes. This type of behavior is common within the political arena in part because political leaders will often expire before the longer-term consequences of their short-sighted policy decisions take effect. The Trump EPA's efforts to soften regulations on toxic substances such as asbestos and chlorpyrifos may provide some limited economic benefits for the nation in the short-term. However, they may also generate longer-term health and environmental effects, and there is little incentive for federal officials currently in office to give adequate weight to those effects.

IV. PROTECTING FEDERAL TOXICS REGULATION AGAINST SPECIAL INTERESTS

In recent years, presidential campaign promises to regulate or deregulate certain industries have become powerful tools for bolstering support.²¹⁴ The executive branch's role in federal regulatory activities is an accepted and valuable element of American democracy. Accordingly, the president's ability to advance his or her political agenda by strengthening or revoking regulations issued by predecessors warrants preservation. On the other hand, it is prudent and in the best long-term interest of the nation to impose some constraints on a given president's ability to reshape federal policymaking.

For reasons articulated above, federal toxics regulation is one area of policy for which constraints on presidential power seem justified. And in the context of toxics regulation, advancing research tends to generally only prompt increased regulation over time as scientific knowledge about the harms of certain substances becomes clearer. Thus, greater constraints on presidential authority are arguably necessary to limit the rapid abandonment of toxics restrictions than to limit excessive increases in such restrictions. Part IV describes certain specific proposals aimed at addressing shortcomings of the TSCA to better guard against such erosion now and in the future.

214. See *U.S. Election 2020: Has Trump Delivered on His Promises?*, BBC: US & CANADA (Oct. 15, 2020), <https://www.bbc.com/news/world-us-canada-37982000> (noting President Trump's campaign promises and their relation to continued voter support).

A. Modeling U.S. Toxics Regulation After the EU's REACH

Placing greater burdens on chemical manufacturers to prove the safety of their products is one potential means of limiting EPA discretion and better fortifying toxics regulation against short-sighted rollbacks. A federal statute governing the registration of toxic substances modeled after the European Union's Registration, Evaluation, Authorisation, and Restriction of Chemicals (REACH) applies such an approach, and enacting similar laws in the U.S. could do much to address the vulnerabilities that currently afflict U.S. toxic substance regulation.²¹⁵

The EU enacted its primary chemical regulatory system, REACH, in 2006.²¹⁶ REACH regulates toxics by shifting much of the burden onto manufacturers to ensure chemical safety.²¹⁷ Unlike the TSCA, which acts under a presumption of chemical safety, REACH requires that chemical risks be controlled, eliminated, mitigated, or justified by their manufacturers.²¹⁸ Notably, REACH requires that chemical users submit minimum toxicity and eco-toxicity data for both new and existing substances.²¹⁹ Where there is insufficient toxicity data, firms must carry out new safety tests.²²⁰ Until a manufacturer submits adequate chemical testing and registration data, its products cannot enter the EU market.²²¹

Unlike the TSCA registration and authorization process, REACH imposes strict and concrete guidelines for manufacturers. Under the REACH process, officials identify chemicals of concern and set deadlines for authorization and proof of safety registration.²²² Applicants may only receive extensions of these deadlines by showing that the socio-economic benefits of the chemical outweigh the risk and that there is no suitable alternative.²²³ During the authorization stage, REACH places an affirmative burden on manufacturers to justify their chemical uses and prove safety. Applicants must show that the risk from the use of the substance is adequately controlled to receive authorization.²²⁴ Regulators may also set an effective deadline by

215. John S. Applegate, *Synthesizing TSCA and REACH: Practical Principles for Chemical Regulation Reform*, 35 *ECOLOGY L. Q.* 721, 723 (2008).

216. *Id.* at 723.

217. *Id.* at 746.

218. *Id.*

219. Adam D.K. Abelkop et. al., *Regulating Industrial Chemicals: Lessons for U.S. Lawmakers From the European Union's REACH Program*, 42 *ENVTL. L. REP. NEWS & ANALYSIS* 11042, 11044 (2012).

220. *Id.* at 11044.

221. *Id.* at 11044.

222. *Id.* at 11047 (providing example of how REACH's policies have stimulated safety data gathering from covered entities).

223. *Id.* at 11047-48, 11059 (explaining that REACH allows extended registration deadlines).

224. *See id.* at 11059 (explaining the requirements to obtain authorization for a substance's specific use).

which certain chemicals of “very high concern” must be removed from the market pending authorization.²²⁵ Chemicals of “very high concern” must be progressively substituted with identified suitable alternatives.²²⁶

REACH likewise has provisions designed to increase both chemical awareness among downstream users and data transparency. Under REACH, manufacturers must communicate safety information up and down their supply chain.²²⁷ Regulators require manufacturers to disclose who their downstream users are, notify the users of the potential hazards associated with chemical use, and inform the users of chemical management techniques.²²⁸

In summary, there are three notable differences between REACH and TSCA that make REACH more effective at regulating toxic substances: (1) REACH implements a more precautionary approach to chemical regulation; (2) REACH places the burdens of data generation, risk assessment, and risk management on manufacturers; and (3) REACH ultimately imposes stricter requirements on manufacturers in their use of chemicals.

The Trump Administration’s recent actions to roll back Obama-era policies demonstrate that current regulations do not provide the necessary protections to prevent such regressive policymaking. A stricter, more precautionary regulatory scheme governing toxics would weaken special interest group influence and disincentivize rent-seeking behavior. This regulatory scheme would make it more difficult for the executive to disregard existing toxics risk evaluations for the benefit of interested corporations. By placing the onus on corporations to prove chemical safety with conclusive research, the U.S. embraces a system that leads with the principle that human safety and health matter more than profits.

B. Developing Alternatives to Asbestos and Chlorpyrifos

Another potential way to help federal lawmakers overcome political influence from private industry stakeholders in the regulation in toxics would be to couple stricter regulations on toxic substances with financial incentive programs to spur the development of alternatives to those substances. For instance, the federal government could offer tax credits, grants, or other benefits for the uses of alternative substances in conjunction with new

225. *See id.* at 11058–59 (explaining when a substance of very high concern may be phased out under REACH).

226. *Id.* at 11058.

227. *Id.* at 11047.

228. *Id.* at 11047 (explaining reporting of end uses); *See generally* THOMAS BRINKMANN ET AL., BEST AVAILABLE TECHNIQUES (BAT) REFERENCE DOCUMENT FOR THE PRODUCTION OF CHLOR-ALKALI (2014), https://publications.jrc.ec.europa.eu/repository/bitstream/JRC91156/cak_bref_102014.pdf (presenting industry reported data on industrial emissions, potential hazards, and techniques used).

restrictions on longstanding uses of chemicals such as asbestos or chlorpyrifos. Such balancing could potentially help to temper resistance from private special interest groups against new restrictions on hazardous substances and thereby make it more politically feasible to enact them.

1. Promoting Integrated Pest Management Practices

Some farmers have successfully implemented Integrated Pest Management Practices (IPM) as an alternative to chlorpyrifos use, so the federal government could potentially couple a ban on chlorpyrifos with new programs designed to subsidize the adoption of IPM or similar alternatives. Every crop grown with chlorpyrifos in the U.S. grows organically in California without the chemical.^{229, 230} By adopting integrated or ecological pest management strategies, farmers can greatly reduce their reliance on harmful pesticides.²³¹

IPM is an ecosystem-based farming strategy focusing on long-term prevention of economically significant pest damage.²³² Growers are encouraged to employ pest management techniques such as habitat manipulation; biological control; cultural practices; adopting disease and insect resistant crop varieties; and mechanical or physical controls.²³³ Growers forego highly toxic pesticides in favor of less-toxic products, such as those approved for organic production.²³⁴ Chemical pesticides are a last resort option and only applied in ways to minimize human health risks.²³⁵

Ecological Pest Management (EPM) uses many IPM techniques but emphasizes building and maintaining healthy soil to maximize plant growth and encourage disease and pest resistance.²³⁶ Growers use a combination of techniques to maintain crop health such as: crop rotation; intercropping; legume and non-legume cover crops; application of organic soil amendments; zero or conservative tillage; and establishment of habitat for predators and pollinators.²³⁷

229. *Chlorpyrifos Alternatives in California Factsheet*, PESTICIDE ACTION NETWORK N. AM. (June 2017), <https://www.panna.org/sites/default/files/CPF-alternatives-2017-CA.pdf>.

230. Press Release, Cal. Env'tl. Prot. Agency Dep't Pesticide Regul., Agreement Reached to End Sale of Chlorpyrifos in California by February 2020 (Oct. 9, 2020), <https://www.cdpr.ca.gov/docs/pressrls/2019/100919.htm>.

231. *Id.*

232. PESTICIDE ACTION NETWORK N. AM., *supra* note 229.

233. *Id.*

234. *Id.*; Organic Materials Review Institute (OMRI) lists all products and materials allowed for organic use. See *OMRI Lists*, ORGANIC MATERIALS REV. INST., <https://www.omri.org/omri-lists> (last visited Jan. 20, 2021).

235. PESTICIDE ACTION NETWORK N. AM., *supra* note 229.

236. *Id.*

237. *Id.*

California growers have been particularly successful at employing IPM or EPM systems without the use of chlorpyrifos. Furthermore, EPM may generate significant long-term economic benefits.²³⁸ EPM may allow growers to achieve organic certification leading to substantial benefits through higher market premiums. California organic growers account for approximately 43% of organic products sold in the United States.²³⁹ From 2013 to 2014, California Certified Organic Farmers experienced a 6.4% increase in farmland, including almond and citrus acreage, two of the most chlorpyrifos dependent crops.²⁴⁰

Offering grants or rebates to farmers to reward and encourage their purchase of equipment or materials to implement IPM or EPM methods could help soften the economic blow to them from an outright chlorpyrifos ban. Such programs could also help to address some of the public choice theory-related obstacles described above that might otherwise continue to hinder the advancement of federal chlorpyrifos regulation.

2. Promoting Safer Technologies and Retrofitting Chlor-alkali Plants

Congress could similarly couple stricter bans on asbestos uses with tax credit or grant programs designed to subsidize new uses of more safety-conscious and environmentally-sound chlorine production methods. Today, businesses across the world are increasingly replacing legacy uses of asbestos with safer alternatives.²⁴¹ In the U.S., the chlor-alkali industry is the only active user of raw asbestos minerals in the country.²⁴² According to the EPA, 15 chlorine plants in the US that use asbestos technology in their operations remain.²⁴³ Some smaller plants have already retrofitted and converted their plants to use a membrane-cell process.²⁴⁴ Using the membrane-cell method is more environmentally friendly and safer to operate than using either mercury or asbestos to produce chlorine and sodium hydroxide.²⁴⁵

Additionally, membrane cells generally possess an increased tolerance to power fluctuations and can be more cost-efficient in regions with fluctuating energy prices. For example, a plant in Poland exhibited a 50% reduction in steam consumption and a 5% reduction in electricity consumption; a converted plant in Norway reduced electricity consumption

238. *Id.*

239. *Id.*

240. *Id.*

241. FLANAGAN, *supra* note 45, at 26–27.

242. *Id.*

243. OFF. CHEM. SAFETY & POLLUTION PREVENTION, ENVTL. PROT. AGENCY, EPA-740-R1-7018, PROBLEM FORMULATION OF THE RISK EVALUATION FOR ASBESTOS 25 (2018).

244. *See* VALLETTE, *supra* note 48, at 95–100.

245. *See generally* THOMAS BRINKMANN ET AL., *supra* note 228 (explaining environmental and safety benefits and disadvantages of the membrane-cell method, using reports from different plants).

of almost 15% and steam consumption of 65%.²⁴⁶ Of course, the costs and time needed to convert older, larger plants remain an obstacle to abandoning the use of asbestos in chlorine production. One estimate stated that it could take 1.5–2.5 years to convert a chlorine plant using traditional asbestos technology and can cost up to \$500–700 per metric ton of chlorine produced.²⁴⁷ Despite the expected considerable upfront cost, there are compelling reasons to convert to a membrane-cell plant. Such reasons are environmental, as well as occupational health and safety concerns; the reduced costs because of energy efficiency; and improved quality of sodium hydroxide produced.²⁴⁸ Converting the remaining chlorine plants would achieve great environmental benefits such as: the prevention of asbestos emissions and generation of asbestos waste; and a reduction of energy consumption. An asbestos-free process would also remove the occupational hazards involved with mining, transporting, storing, use, maintenance, and disposal of asbestos minerals.

The federal governments could potentially help to overcome private stakeholder opposition to stricter asbestos bans and externality problem associated with asbestos use by offering tax credits to support investments designed to remove asbestos uses from the chlorine production process. An externality problem is a market failure that results when a party does not internalize all of the cost of benefits of engaging in a given activity.²⁴⁹ Positive externality problems arguably deter current or potential asbestos users from replacing asbestos-using production methods with safer alternatives because such actions generate many benefits that are not fully internalized by parties taking them.²⁵⁰ One potential means of addressing this positive externality problem would be to enact policies or programs that help those who abandon asbestos uses internalize more of the societal benefits of their actions.²⁵¹

Federal policies and programs that have helped the renewable energy sector to grow in recent decades could potentially be used as templates to accelerate a complete national transition away from asbestos use. The

246. *Id.* at 159–60.

247. UNEP GLOBAL MERCURY PARTNERSHIP CHLOR-ALKALI AREA, CONVERSION FROM MERCURY TO ALTERNATIVE TECHNOLOGY IN THE CHLOR-ALKALI INDUSTRY 9 (2012), <https://worldchlorine.org/wp-content/uploads/2015/08/Partnership-Documents-on-the-Conversion-from-Mercury-to-Alternative-Technology-in-the-Chlor-Alkali-Industry.pdf>.

248. BRINKMANN ET AL., *supra* note 228, at 17.

249. TROY A. RULE, SOLAR, WIND AND LAND: CONFLICTS IN RENEWABLE ENERGY DEVELOPMENT 2 (2014).

250. *See id.* at 3 (discussing external benefits of landowner's and developer's decision making).

251. *See* Mark R. Powell, *The 1983-84 Suspensions of EDB Under FIFRA and the 1989 Asbestos Ban and Phaseout Rule under TSCA: Two Case Studies in EPA's Use of Science* (AgEcon Search: Research in Agricultural and Applied Economics, Discussion Paper 97-06-REV, 1997), <https://ageconsearch.umn.edu/record/10907>.

renewable energy investment tax credit program (ITC) has been among of the most impactful federal policies for promoting certain types of renewable energy investment over the past decade.²⁵² Conceivably, Congress could enact a new type of ITC that instead awarded tax credits for qualifying investments in asbestos-replacing technologies and equipment within the chlor-alkali industry. Additionally, loan guarantee programs such as the American Recovery and Reinvestment Act's (ARRA) § 1705 provided federally guaranteed loans for qualified renewable energy developers, reducing lending risks and thereby encouraging private lenders to finance solar projects.²⁵³ Federal loan programs, such as the programs enacted by ARRA, could similarly help chlor-alkali industry companies to secure the financing needed to transition fully away from asbestos use. Given the significant impact the chlor-alkali industry has on the U.S. economy, such funding could do much to preserve this important industry while also facilitating the important transition to clean and safe chemical process alternatives.

One additional potential means of accelerating a final and complete transition away from all asbestos use would be to increase federal support for private research focused on developing alternative chlor-alkali production processes that are cost-efficient and asbestos-free. Teams of engineers, scientists, and operators working to develop chemical processes that do not use asbestos or mercury, are lower cost, and leave smaller carbon footprints than currently used industry methods, already exist and are making headway.²⁵⁴ Greater federal grant support for the research and development of such asbestos-free technologies could further expedite the transition to a fully asbestos-free national chlor-alkali industry. Once that transition is complete and cost-effective asbestos alternatives are in place, industry stakeholders will be far less likely to pressure federal government officials in the future to loosen asbestos regulations.

252. See Richard W. Caperton, *Good Government Investments in Renewable Energy*, *CTR. AM. PROGRESS* (Jan. 10, 2012), <https://www.americanprogress.org/issues/green/reports/2012/01/10/10956/good-government-investments-in-renewable-energy/> (calling ITC a “tremendous success”).

253. VARUN SIVARAM, *AM. ENERGY INNOVATION COUNCIL, THE AMERICAN RECOVERY AND REINVESTMENT ACT AND THE RISE OF UTILITY-SCALE SOLAR PHOTOVOLTAICS: HOW U.S. PUBLIC POLICY DURING THE GREAT RECESSION LAUNCHED A DECADE-LONG SOLAR BOOM 2–10* (June 2020), <http://americanenergyinnovation.org/wp-content/uploads/2020/06/The-Successful-Demonstration-of-Utility-Scale-PV.pdf>.

254. See CHEMETRY: WHY WE DO IT, <http://chemetrycorp.com/why-we-do-it/> (last visited Jan. 21, 2021) (focusing on developing economically viable alternatives to chlorine gas that reduce energy consumption, reduce waste water generation, and avoid harmful chemicals such as asbestos).

CONCLUSION

The weakening of federal restrictions on asbestos and chlorpyrifos in recent years showcase the potential vulnerabilities of the existing federal regulatory system for toxic substances. Fortunately, it is possible to better fortify this important regulatory structure to better withstand pressures from shortsighted special interests and thereby ensure the long-term safety and health of Americans. By embracing a more precautionary approach comparable to the EU's REACH program that is more data-driven and places larger burdens on private industry actors to prove the safety of the products, the U.S. could finally implement a regulatory system that is both administrable and effective. And offering tax credits and grant programs to help offset the costs to private businesses of transitioning to safer alternatives to substances such as asbestos and chlorpyrifos can make such regulatory changes more politically palatable and sustainable. By embracing these and other strategies aimed at better safeguarding federal toxics regulations against shortsighted special interest influence, Congress can ensure that Americans living today and well into the future are fully protected from highly hazardous substances.