ARTICLES

Cradle-to-Cradle: The Elimination of Waste Introduction
*Megan Backsen & Jack Hornickel*..............................................................572

Keynote Address: Ecological Design
*Lauren Valle*....................................................................................................575

EPA’s Role in Implementing and Maintaining the Oil and Gas Industry’s Environmental Exemptions: A Study in Three Statutes
*Adam Kron*......................................................................................................586

Externalizing the Costs of Hazardous Waste Production from the United States
*Sarah Westervelt & Whitney Beckham*............................................................636

A Comparison of E-Waste Extended Producer Responsibility Laws in the European Union and China
*Robert Reagan*.................................................................................................662

Who Certifies the Certifiers?
*Wynn Heh*........................................................................................................688

Trees or Towers?: The Battle Over Northern Pass
*Israel Piedra*....................................................................................................716
## Editorial Board 2014–2015

**Editor-in-Chief**
Andrew W. Minikowski

**Administrative Editor**
Crystal Abbey

**Senior Managing Editor**
Thea Graybill

**Senior Articles Editor**
Scott Lake

**Senior Notes Editor**
Libby Bowker

**Web Editor**
Jake Beckstrom

**Symposium Editors**
Jack Hornickel
Megan Backsen

**Social Media Editor**
Kat Stinson

**Managing Editors**
Caroline Casey
Will Kirk
Kelly Nokes

**Events Editor**
Thomas Belli

**Head Notes Editors**
Lisa Franceware
Allison Gabala
David Keagle
Phoebe Youhanna

**Articles Editors**
Elijah Gleason
Benjamin Gustafson
David Scott
Ashley Welsch

**Production Editors**
Rob Batten
Mychal Ozaeta
Daniel Schreiber
Sarah Zelcer

**Editorial Staff**

<table>
<thead>
<tr>
<th>Peter Agresta</th>
<th>Crystal Alonso</th>
<th>Ian Altendorfer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jacquelyn Dussault</td>
<td>Kelsey Eggert</td>
<td>Grady Erickson</td>
</tr>
<tr>
<td>Gregg Freeman</td>
<td>Stephen Jochem</td>
<td>Taylor Kennedy</td>
</tr>
<tr>
<td>Kathryn Long</td>
<td>John Lowery</td>
<td>Matthew Marotta</td>
</tr>
<tr>
<td>Devika Mitra</td>
<td>Joanna Peterson</td>
<td>Jordan Reiter</td>
</tr>
<tr>
<td>Breanne Reitzel</td>
<td>Ashton Roberts</td>
<td>Matthew Roche</td>
</tr>
<tr>
<td>Kristen Rodgers</td>
<td>Lydon Schutlz</td>
<td>Andrew Settle</td>
</tr>
<tr>
<td>Joseph Simpson</td>
<td>Jacqueline Sopko</td>
<td>Rosie T. Stone</td>
</tr>
<tr>
<td></td>
<td>Brittany Wright</td>
<td></td>
</tr>
</tbody>
</table>

**Faculty Advisor**
John Echeverria
CRADLE-TO-CRADLE: THE ELIMINATION OF WASTE

INTRODUCTION

By Megan Backsen & Jack Hornickel

Each year the Vermont Journal of Environmental Law ("VJEL") hosts experts, lawyers, academics, and practitioners to focus on one topic. As the only environmental law journal at Vermont Law School ("VLS"), the premier environmental law school, VJEL is acutely aware of its role in guiding environmental discourse. Accordingly, this year, VJEL chose to address the broad topic of waste, challenging the assumption that waste is an inherent part of modern life. Titled Cradle-to-Cradle: The Elimination of Waste, the 2014 VJEL symposium was composed of a keynote speaker, four panels that each focused on a different waste stream, and a series of interactive events.

At a time when so many other crises appear more pressing, the issue of waste remains pernicious. Academics and governments alike continue to view the steady accumulation of garbage as a threat to orderly life. This is evidenced by the plastic bag ban in California, the New York City Styrofoam ban, mandatory composting in San Francisco and Portland, Vermont’s electronics recycling law, improvements in energy transmission, gray water systems, etc.

The keynote address by Lauren Valle, with John Todd Ecological Design, opened the day with a discussion of the theories of ecological design, their application to the restoration of waterways, and detailed explanations of specific projects. A complete transcript of her keynote address is published below.

The panel series began with Lost in Transmission: Energy Waste. The panel featured Scudder Parker of the Vermont Energy Investment Corporation, who discussed the inefficiencies of energy transmission and home use. Following was Adam Kron, an attorney with the Environmental Integrity Project, whose article on wastewater from hydraulic fracturing is published below. Finally, VLS Professor Hillary Hoffmann highlighted a unique intersection of energy waste and civil rights by telling the story of an Indian tribe that was forced to accept hydraulic fracturing wastewater on its reservation.

The next panel, Flotsam, Jetsam, & Plastic: Ocean Waste, was led by Dr. Kara Lavendar Law, a research professor of oceanography at the Sea Education Association. Dr. Law addressed the insidious problem of micro
plastic waste in the ocean water column while debunking the myth that marine plastic debris gathers in large garbage patches visible from outer space. Nicholas Mallos, a conservation biologist with the Ocean Conservancy, continued the conversation by discussing his organization’s Trash Free Seas Alliance, which works with members of industry to help developing nations erect the necessary infrastructure to properly deal with increasing waste generation. Finally, Megan Herzog, the Emmett/Frankel Fellow in Environmental Law & Policy at the UCLA School of Law outlined the local, state, and federal policy initiatives that address the problem of marine debris. VJEL recently published her work on its EcoPerspectives blog.¹

After lunch, the symposium tackled the evolving issue of e-waste in Planning Against Obsolescence: Electronic Waste. The panel began with Dynda Thomas, an attorney with Squire Patton Boggs, representing technology companies that must report their sourcing of so-called conflict minerals to comply with new rules from the Securities and Exchange Commission (“SEC”). Congress charged the SEC with monitoring certain minerals—tungsten, tin, tantalum, and gold—because of their necessity in electronics and their contribution to armed conflict in the Democratic Republic of the Congo. Following Ms. Thomas was Deborah Albers, the Principal Social Strategist of Corporate Responsibility for Dell Computers who explained how the manufacturers of electronics can design products with replaceable and recyclable components. Perhaps Sarah Westervelt of the Basel Action Network, an organization working to enforce the international convention on global toxics trade, introduced the most fascinating link between electronic waste and law. Her article, co-authored by Whitney Beckham, outlines the successes and failures of the Basel Convention and is published below. Cathy Jamieson rounded out the e-waste panel by explaining the landmark solid waste legislation in Vermont, which mandates electronics recycling and created a network of collection centers for easy access.

The final panel of the day was Clean Plate Club: Agricultural and Food Waste. First, Jean Bonhotal, of Cornell’s Waste Management Institute, framed the issue of agricultural waste by simply asking, “what do we do with all of it?” Texas, for example, applies compost to the embankments along its state highways to grow grass, which captures carbon, absorbs heat, and combats erosion. Karl Hammer, owner of Vermont Compost Company, explained the unique challenges of operating

a commercial compost facility, while keeping the audience rolling with laughter. Theresa Snow concluded the panel by describing her groundbreaking work with Salvation Farms, a non-profit organization she founded to better manage surplus farm products in Vermont. Ms. Snow coordinates gleaning—the harvesting of edible but unmarketable farm produce—and even works with prisoners to process the otherwise wasted foods into packaged bulk products.

However, Cradle-to-Cradle was not simply a recitation of research and legal analysis; the event itself was an exercise in waste diversion and reduction. Attendees were served a lunch of soup, sandwiches, and salads, sourced primarily from South Royalton’s own Luna Bleu Farm. For the attendees that were not card-carriers of the Clean Plate Club, volunteers from VJEL and the VLS Campus Greening Committee collected uneaten food scraps. In total, VJEL collected six quarts of food scraps and diverted them to nearby Hurricane Flats for on-farm composting and reintegration into the nutrient cycle. VJEL invited attendees, at the conclusion of the event, to a guided tour of the VLS campus, highlighting the Clivus Multrum composting toilet system and two solar arrays that help to power the law school.

On display for the month surrounding Cradle-to-Cradle, VJEL also hosted an exhibition of ‘Seven Days of Garbage’ by Los Angeles photographer Gregg Segal. The series of ten images were portrayals of families, roommates, and individuals, literally covered in a week’s worth of their own garbage. The graphic, compelling images demonstrated the sheer volume of trash generated by consumers in our one-time-use society. Mr. Segal’s website holds the entire series. VJEL also commissioned Brooklyn-based illustrator Alix Pentecost Farren to produce the artwork for Cradle-to-Cradle. Her cyclical representation of a unified waste stream perfectly captured the essence of the event and provided an identifiable image for its promotion.

Cradle-to-Cradle was an overwhelming success, and VJEL was happy to share its environmental vision with the legal, scientific, and lay communities. For those that were unable to attend, the entire event is available for viewing on VJEL’s YouTube page.

KEYNOTE ADDRESS: ECOLOGICAL DESIGN

By Lauren Valle*

John Todd Ecological Design specializes in designing systems based on a cost-effective, renewable philosophy known as ecological design. The concept of ecological design goes far beyond that of sustainable design. Sustainable design is less harmful or less impactful than conventional practices. Ecological design, also known as regenerative design or Biomimicry, is a proactive design process that aims to create the space for, and set into motion, ecological processes that mimic Mother Nature in an intentional and measured way. The intention of ecological design is to find a balance between controlling an engineered system and allowing the system to be in relationship with the natural world. The goal is to enable the system to establish itself and thrive in a far more complex and sophisticated way than humans could ever imagine generating.

The practice of ecological design necessitates a radical shift from traditional practices of architecture, engineering, and design. For the past few centuries, architecture and engineering have focused on overcoming natural forces. Ecological design shifts the focus to creating the conditions for the proliferation of life, and allies itself with natural forces to make them maximally useful for meeting human needs.

Howard Odum, one of the first thinkers in the field of ecological design, said, “[t]he inventory of species of the earth is really an immense bin of parts available to the [E]cological engineer.” Like conventional technologies, ecological technologies are intended to do work, such as generating fuel, growing foods, transforming wastes, and regulating indoor climates. The difference between a conventional technology and a living technology is that a living technology is made up of hundreds of thousands of organisms acting with their own intelligence—microorganisms, mollusks, fish, plants, and higher life forms. In conjunction with sunlight,

* Lauren Valle is the Project Coordinator with John Todd Ecological Design. This article is a transcript of my keynote address at Vermont Journal of Environmental Law’s Symposium entitled, Cradle to Cradle: An Elimination of Waste.

these organisms form a constantly shifting eco-system engaging in many biological processes, including nutrient-to-waste recycling.\textsuperscript{4}

An important concept behind ecological design can be understood when one considers human urine. Human urine contains nitrogen, phosphate, and potassium at a ratio similar to that of commercial fertilizer.\textsuperscript{5} A human adult produces enough urine to produce $50-100\%$ of its own food crops.\textsuperscript{6} However, most human urine goes into waste treatment plants and many of the nutrients in the wastewater end up rivers and waterways, causing problems such as eutrophication. Ecological design recognizes that what is often called waste—in this case human urine—is actually a resource.

These ideas were put into practice at the New Alchemy Institute in the 1970s at a 35 acre research farm on Cape Cod where John Todd and other scientists conducted a homesteading experiment.\textsuperscript{7} In the course of the experiment, the scientists designed several closed-loop systems that produced food, dealt with waste, and generated fuel.\textsuperscript{8} Their findings, which were meticulously documented, were eventually published and remain influential in the world of closed-loop ecological systems thinking.\textsuperscript{9}

These early designs involved domes and clear-sided tanks. Each of these enclosures contained several different ecological systems. For example, a single dome would contain alcoves of trees, aquaculture, and gardens working together as an ecosystem. The Institute also developed designs using solar emitting, clear-sided tanks that contained fish and algae, which became the foundation for Dr. Todd’s extensive work in treating contaminated waters that is the focus of this talk. These initial concepts were married together in facilities that the New Alchemists built in the 1970s such as, the Prince Edward Island Ark, which raised fish, provided heat, and treated waste, inside one greenhouse.\textsuperscript{10}

\begin{thebibliography}{99}

\bibitem{4} VAN DER RYN & COWAN, supra note 2, at 34–36.
\bibitem{5} See HÅKAN JÖNSSON, SOURCE SEPARATION OF HUMAN URINE-SEPARATION EFFICIENCY AND EFFECTS ON WATER EMISSIONS, CROP YIELD, ENERGY USAGE AND RELIABILITY 1 (2002) (noting that the fertilizing effect of human urine is comparable to that of chemical fertilizer).
\bibitem{10} NANCY JACK TODD & JOHN TODD, FROM ECO-CITIES TO LIVING MACHINES: PRINCIPLES OF ECOLOGICAL DESIGN 6–7, 11, 39 (1993), available at

\end{thebibliography}
The early work at the New Alchemy Institute also paved the way for a wastewater remediation technology called the Eco-Machine, formally known as the Living Machine, which uses clear-sided solar aquatic tanks in combination with other treatment environments, such as anaerobic septic tanks. The original Eco-Machine was built in Harwich, Massachusetts. It treated septic waste from households and small businesses that were being stored in an unlined lagoon. The effluent in this lagoon contained 14 of the Environmental Protection Agency’s ("EPA") top priority pollutants and was leaking through the sand into the water table. Dr. Todd designed an ecological system composed of 14 clear-sided solar tanks that connect together to form a river, with effluent from the lagoon flowing through the system. He also constructed a sidestream marsh as an additional treatment environment. He placed hundreds of forms of aquatic life into the tanks that he collected from ten different local environments. After 12 days, 14 of the 15 top priority pollutants dropped below regulatory limits and the effluent met federal swimming water standards. With the help of sunlight and the diversity of organisms, the eco-system within the tanks self-organized to adapt to its environment and to consume and metabolize the waste. The various biological components co-evolved with the wastewater to bring the system into stasis because that is what nature wants to do; it wants to come back into stasis; it wants to heal itself.

Another early work that Dr. Todd designed was installed on the Flax Pond, also in Harwich. This project used a technology called a Restorer that co-evolved with the Eco-Machine. The Eco-Machine technology is an enclosed, stand-alone technology. The Restorer, in contrast, is a floating plant raft that supports masses of suspended roots, which provides a habitat for microbial communities that can metabolize and decompose nutrients and waste. The Flax Pond is a 15 acre pond that was "heavily
impacted for decades by leachates from an adjacent landfill and unlined septage holding lagoons."21 In 1989, the pond was closed to recreational activities because it was contaminated by 78,000 gallons of leachate each day.22 The pond suffered from low oxygen levels, excessive sediment, and excessive organic pollutants.

Dr. Todd anchored a Restorer on the pond in 1992 and circulated 100,000 gallons of water through the system per day.23 The Restorer was divided into cells. The first three cells contained pumice rock and the final six cells supported two dozen species of terrestrial plants. The system used plant roots and associated bacteria to metabolize pollutants. For the decade that the Restorer was operating, the pond maintained its biological health despite the continued onslaught of pollution. Ammonia and sediment levels did not increase, the pH of sediments hovered around neutral, and dissolved oxygen increased. Most importantly, the Restorer digested about 25 inches of sediments in three years.24

Another important early ecological design project was a waste treatment plant treating 80,000 gallons per day of municipal wastewater that was built in 1995 in South Burlington, Vermont.25 In this system, wastewater passed through an anoxic reactor and then into four aerobic reactors, large transparent tanks containing water and a diversity of organisms. On the surface of these reactor tanks were plant racks with suspended root growth reaching into the water column. Following the aerobic reactors, wastewater passed into a clarifier tank that also had growing plants on it. It was very beautiful. The aerobic reactor tanks were the most biologically diverse components of the system containing over 200 species of vascular and woody plants.26 Each of these plants was evaluated for its effectiveness and suitability for wastewater treatment, its ability to tolerate sewage, the extent of the root zones, disease, and infection resistance, and ease of management. After being treated by the Eco-Machine, the wastewater met regulatory standards for tertiary treatment. The South Burlington plant also produced economically valuable plants as a bi-product and 100,000 ornamental koi fish.

21. Id. at 426.
22. Id.
23. Id.
24. Id. at 427.
25. Id. at 422.
26. Todd et al., supra note 17, at 423.
Another important step in the development of ecological design came from a project in Berlin, Maryland. This 2001 project involved a lagoon at a Tyson chicken processing plant. By this time, the Restorer system that we used in Harwich had evolved into a linear design that we adapted “for use on new and existing wastewater treatment lagoons.” This technology combines the benefit of the small tank-based technology with the simplicity of constructed wetlands.

The lagoon held nine million gallons of effluent, with one million gallons per day cycling through. We installed 12 linear Restorers—long, narrow racks containing a diversity of plants—that stretched 140 feet across the surface of the lagoon. These Restorers were secured to the banks and created a serpentine, s-shaped flow of water through the lagoon. The Restorer racks contained 25 native species of plants. The roots of these plants provided surface area and nutrient support for microorganism communities. The plants provided some nutrient uptake and the shaping of the racks inhibited suspended algae. The system also provided both aeration and an aerobic treatment environment.

This system was built for one-quarter of the cost of a traditional solution. Tyson looked at many other companies and chose Dr. Todd’s solution because it was the most economical choice. Our ecological system reduced the electrical energy used in the lagoons by 74% and significantly decreased sludge production. Previously, the lagoon had wasted sludge for eight hours a day. After we installed the ecological treatment system, the lagoon wasted sludge for just one hour every few weeks. This allowed Tyson to comply with wastewater regulations. It also looked very beautiful.

Next, we are going to travel around the world a bit and look at a project in China—a canal in the city of Fuzhou. Fuzhou is one of China’s up-and-coming cities. It is home to six million people and when this project was built, it was disposing untreated wastewater into an 80-kilometer series of canals throughout the city. The canals empty into a river. Obviously, these

28. Id.
29. Todd et al., supra note 17, at 427.
30. Id. at 428.
31. Id.
32. Id.
33. Id.
34. Id. at 429.
35. Id.
canals are a health risk for the city’s inhabitants. They also threaten the livelihood of fishing communities downstream.

In 2002, we installed a Restorer on one of the canals. We used over 12,000 plants, including 20 native species. The Restorer also had a walkway down the center, so the area became a prized recreational area for the community. The project enabled the city to meet its water quality goals. For example, nitrogen levels fell below 15 mg/L. There was no more floating solids, and a significant reduction in odor. The project drastically improved the aesthetics of the neighborhood.

A few years ago, an engineer from China came to work at John Todd Ecological Design who grew up on the canal in Fuzhou. She lived next to this system as a child and chose a career in ecological engineering because she had seen firsthand the impact that this kind of technology had on her community.

Back in the United States, one of our more recent projects is on the Blackstone River in Grafton, Massachusetts, and involves a canal that is quite emblematic of many American waterways. The Blackstone River is considered the birthplace of the Industrial Revolution in the United States. It runs 45 miles from Worcester to Providence. There are hundreds of old mills along the river, including the Fishersville Mill, which was constructed in 1832 as a textile factory. This mill initially produced cotton textiles, then tool and dye, and finally lawn furniture and foam rubber. It closed its doors in 1986; it was open for over 150 years. In 1999, a 23-alarm fire burned it to the ground, releasing massive asbestos plumes into the air and leaving “behind toxic rubble on top of an already degraded environment.”

The site underwent a five year cleanup effort in which many of the materials, including two leaking underground oil storage tanks, were removed. The cleanup left behind a heavily degraded canal that was

37. Id.
38. Id.
39. Id.
40. Id.
43. Id.
44. Id.
45. Id.
46. Id.
47. Id.
choked with crude oil from the underground storage tanks. The crude oil leaches into the canal with every rainstorm.

In 2006, an interdisciplinary commission contacted John Todd and asked if the Restorer technology could be a solution for this canal. While we had experience treating many tricky contaminants and highly toxic waste, the oil was a new challenge for us. We designed a pilot study that began in 2006, in which we added cells of mycelium, or fungus, to our ecological treatment system.\textsuperscript{48} The particular fungi strains that we used are known for their ability to “break down petroleum hydrocarbons.”\textsuperscript{49} After a year of collecting data on the pilot, we saw that it was breaking down 60 to 90% of the hydrocarbons.\textsuperscript{50} Then, we scaled the design up.

At our greenhouse in Grafton, we have a four-part system. First, within the canal we installed a sediment digester, an HDPE pipe filled with media that is heavily laden with bacteria. This begins the oil digestion. From there, the water flows through the mycelial bins and into a series of solar aquatic tanks. Enzymes excreted from the mycelia are introduced to the waste stream and degrade the hydrocarbons as they flow through the system. Finally, the water flows back out to the canal and is sprinkled onto a Restorer, which serves as further habitat for microbes as well as functions as a chemostat for healthy organisms to incubate and proliferate as they are released back into the canal.

Water flowing through the system removes about 60 to 90% of the hydrocarbons.\textsuperscript{51} The impact on the canals themselves is slightly harder to measure. However, we have noticed upstream and downstream effects, including 40% reductions of hydrocarbons in the sediment. We have also noticed that many indicator species have returned to this canal. This past summer we saw frogs, which cannot tolerate petroleum because it easily passes their porous skin.\textsuperscript{52}

This is an ongoing project that we continue to investigate. In conjunction with this project, we are also hosting workshops that we call the Living Systems Laboratory.\textsuperscript{53} We invite students from the United States and Canada to learn about and pilot ecological design projects with us.

\begin{thebibliography}{9}  \bibitem{48} Id.  \bibitem{49} Id.  \bibitem{50} Id.  \bibitem{51} Id.  \bibitem{52} See Kentwood D. Wells, The Ecology and Behavior of Amphibians 785 (2007) (noting that amphibians are susceptible to environmental degradation because their permeable skin is vulnerable to chemical agents); Fisherville Canal Restorer, Grafton, Mass., supra note 41.  \bibitem{53} Welcome, The Living Systems Laboratory, http://wordpress.clarku.edu/fisherville/ [http://perma.cc/36BM-E8W9] (last visited Apr. 12, 2015) (providing a description of the Living Systems Laboratory).\end{thebibliography}
Now, moving to a project in South Africa, we began working in South Africa about a year ago, looking at sanitation issues in some of the informal settlements that were established after Apartheid. We have been working at a settlement called Langrug, which is in the Western Cape Province outside of the city of Stellenbosch. Langrug is built on a hillside, and the people there collect water in buckets to use in their houses for cooking, washing dishes, and cleaning. After they are done with their water, they take it back outside and dump it into a series of rudimentary canals or channels that flow down the side of the hill. The water flows from the canals onto the village’s sports field, where it turns the field into a soggy mess. From there, the water drains into the nearby Berg River.

A lack of water infrastructure is the case all over South Africa, and the government has become interested in finding a solution. One of the driving forces behind finding a solution is the fact that fruit farmers use water from the Berg River to irrigate their crops, and the European markets that buy these crops are no longer accepting them due to high levels of E. Coli in the irrigation water. So, there is an economic incentive to deal with this issue, as well as a humanitarian incentive.

The water that flows through Langrug’s channels is quite similar in its makeup, to septage effluent. It is equivalent to what comes out of your septic tank, and it is what is flowing out onto the streets. We designed a series of technologies to treat this water. First, we designed an Eco-Machine for the sports field. It is a series of 78 aquatic cells that cascade down the hill and use gravity to move water. When we first arrived in Langrug, we were told that we could not design any infrastructure that used electricity and we said, “okay.” Then they told us we could not use anything in the system that had any value to anyone at all, because they were worried about theft. And we said, “okay.”

Under these strict parameters, we designed a system that can be constructed out of reclaimed brick and mortar produced in the community with a plastic watertight lining. There are no pumps or valves within the system. It also creates several economic opportunities for the community: both fish and cut flowers can be grown using the nutrients in the system and sold. It was especially important to that community that the system be economically beneficial. Therefore, we worked with the community throughout the design process to understand how to make that a reality.

55. Id. However, Dr. Todd changed the design from 87 to 78 aquatic cells after John Todd Ecological Design published this article.
The cells that make up the system will eventually fill with solids from the waste stream. When this happens, the cells can be taken offline and extra biomass, such as prunings from plants, are added to make a rich soil. The off-line cells can then be used to grow an economically valuable crop. After a season, the soil can be removed from the cell and finally the cell is brought back online to be used for treatment.

We also designed a series of tree wells, arboreal soil makers, and micro-wetlands that are upstream from the Eco-Machine that essentially turn these gutters and canals into gardens, using the nutrients in the effluent to grow plants. This low-impact, living, and cost effective method of treating wastewater will add a lot of soil, plants, and trees to a settlement that currently has almost no soil and is almost all hard-pack. It also gives the village an opportunity to raise fish within the system, as we discussed earlier.

We are hoping to see this system built in 2015. It is a radical approach to infrastructure. Langrug is a community that is going from zero infrastructure to ecological infrastructure. The community is happy that their children will no longer be playing in septage-quality water outside of their front doors. We have found that there is a lot of room to design from scratch in places like South Africa because they have areas that do not have the highly regulated, permanent infrastructure already in place that we have in the United States.

Back to the United States: another one of our projects is in Peoria, Illinois. Peoria sits on the Illinois River and, as is typical of a city, is highly developed. Around 2007, EPA told Peoria it could no longer use sewers to manage its stormwater. During rain events, stormwater flows into Peoria’s sewers and if the sewer becomes overloaded, the mixture of stormwater and sewer water is released into the Illinois River in what is called a “Combined Sewer Overflow (CSO)” event. The conventional solution that EPA recommended was to build a 12 foot diameter underground pipe that would take all of stormwater to the city’s waste treatment plant five miles downstream. This was going to cost the city $500 million. The city

---

58. Peter Kenyon, Green Surge Threatens CSO Storage Solution, TUNNELTALK (Jun. 19, 2013), http://www tunneltalk.com/Discussion-Forum-19June2013-Investigating-the-future-of-deep-storage-tunnels-in-the-USA.php [http://perma.cc/MB99-B968] (noting that “[f]or the best part of two decades, deep storage tunnels and CSO interceptor systems have formed the central spine of projects that many of the largest cities in America and sewer districts have been obliged to adopt as part of a
decided to look for alternative solutions that could not only solve their problem but also bring benefits and new life to the community.

To deal with their CSO problem, rather than building an expensive underground pipe, Peoria has decided to implement “capture and infiltration technologies.” The city is going to build infrastructure such as bioswales, rain gardens, and plant-filled boulevards and use permeable pavement techniques to capture its stormwater and infiltrate it into the ground in place so that no stormwater is entering the sewer system. We became involved in this project because Peoria wanted to know how ecological design could fit into its already green plans. Peoria is an up-and-coming city—it is the world headquarters for the Caterpillar Corporation—and it wants to take good care of its many assets.59

There is a lot of empty and unused space on the Peoria waterfront, so we designed a whole series of technologies that stretch along the entire waterfront. These include a five-mile-long Restorer and ecologically-designed public amenities such as a public swimming pool filled with river water that is treated by an Eco-Machine, rather than chlorinated potable water. The Restorer can serve as a back-up technology to the “capture and infiltrate” technologies and can treat CSO water, should a CSO event happen. At all other times, it will treat Illinois River water. It also creates an “urban wilds” that provides recreational opportunities within the city. We have not built this project yet, but I bring this up as an example of how ecological design can be integrated into an entire cityscape and how we can think on a large scale using this approach.

Dr. Todd has been saying a lot lately that he feels like his work is finally coming out of the wilderness. He has been doing this work for going on forty years and, though the projects have been beautiful and successful in their mission, ecological design has yet to be adopted by the mainstream. Now, in the midst of our awakening due to climate change and the severe ecological damage our civilization is responsible for, people are starting to understand that ecological design is one of the ways forward. Ecological design can serve us both in the creation of new, resilient, and living infrastructures that benefit humans and the natural world, and also for the healing and remediation of degraded environments, of which there are so many. I would like to further this thought by saying that I hope that in the

process of reimagining and recreating our built world with the tools of ecological design that we are heading toward a new wilderness. I hope that we can become re-enchanted with nature’s logic. We can re-learn to live as a part of, next to, and within the biological life processes that we belong.

We can create a world for ourselves where our stormwater goes back into the ground; where we have in place massive in situ remediation projects on rivers and streams that remediate persistent legacy contaminants; where we treat microbes and mycelia as powerful allies; where our lands and waters are coming back to life; where we produce food locally with recycled nutrients; where each neighborhood has its own wastewater treatment plant that children love to play near because it is a beautiful garden.

I believe we truly can build a world where human infrastructure can be a part of a regenerative living system instead of a gray, lifeless, concrete system. And I hope this gives you a good, hopeful foundation for the rest of the day. There are some amazing solutions out there and this work can only grow. If you have any other questions, feel free to email me at Lauren@toddecological.com and thank you very much.
EPA’S ROLE IN IMPLEMENTING AND MAINTAINING THE OIL AND GAS INDUSTRY’S ENVIRONMENTAL EXEMPTIONS: A STUDY IN THREE STATUTES

By Adam Kron*

Introduction .................................................................................................................. 587
I. The Oil and Gas Industry’s Processes and Impacts ............................................. 588
   A. The Main Processes: Exploration and Production and Natural Gas Processing ................................................. 588
   B. The Toxic Chemicals the Oil and Gas Industry Uses and Releases 590
II. The Oil and Gas Industry’s Exemptions ............................................................ 594
   A. The Comprehensive Environmental Response, Compensation, and Liability Act ....................................................... 595
   B. The Clean Water Act ................................................................................................. 596
   C. The Clean Air Act ..................................................................................................... 597
   D. The National Environmental Policy Act ................................................................. 598
   E. The Exemptions Investigated in this Article: TRI, SDWA, and RCRA ............................................................................. 598
III. The Toxics Release Inventory ........................................................................ 599
   A. How We Got Here: The Oil and Gas Extraction Industry’s Continued Exclusion from the TRI ............................................. 600
   B. Ways Forward: How EPA Can Undo the TRI Exclusion ......................................................................................... 605
IV. The Safe Drinking Water Act and the “Halliburton Loophole” ........ 609
   A. How We Got Here: The Road to the Halliburton Loophole ........ 610
   B. Ways Forward: How EPA Can Work within and around the Halliburton Loophole’s Fracking Exemption ......................... 614
      1. EPA and the States Must Regulate Fracking with Diesel Fuels.. 615
      2. EPA Must Improve its Regulation of Wastewater Injection Wells ......................................................................................... 617

* Attorney, Environmental Integrity Project. The author would like to thank Courtney Bernhardt for her research assistance; his colleagues at EIP for their support, encouragement, and exceptional work; and the staff of the Vermont Journal of Environmental Law for their indispensable editing and production of this article.
INTRODUCTION

One of the perennial topics of discussion and study in the field of environmental law is the unusual amount of exemptions or exclusions the oil and gas industry has received from our nation’s major environmental laws. For the most part, these laws are broadly applicable and aim at certain environmental impacts and considerations, no matter the source. Yet the oil and gas industry is unique in the amount of exemptions and exclusions it has received—and continues to receive—from these laws. The only other industry that seems to come close is agriculture.

With the recent boom in oil and gas production, along with the increased environmental costs, there has been more focus on the oil and gas industry’s treatment under our environmental laws. However, much of this focus is on Congress, both in its role in bringing about these exemptions and exclusions and in legislative solutions toward ending them. In two ways, this article aims to add greater detail and better solutions to this conversation. First, while Congress undoubtedly played a central role in enacting these exemptions and exclusions, the United States Environmental Protection Agency (“EPA”) laid much of the groundwork for Congress’s enactments and has maintained these exemptions through its long inaction and regulatory inertia. Second, these exemptions are not absolute. Congress’s enactment of them did not foreclose all future regulation of the oil and gas industry under those laws. Each exemption either gives EPA the means to end the exemption or contains an exception, thereby giving EPA much fuller ability to regulate the oil and gas industry than it chooses to use.

In making this case, this article will examine three exclusions or exemptions to major environmental laws: the oil and gas extraction industry’s continued exclusion from the Toxics Release Inventory (“TRI”)
of the Emergency Prevention and Community Right-to-Know Act (“EPCRA”), the recent “Halliburton Loophole” to the Safe Drinking Water Act (“SDWA”), and the Bentsen Amendment to the Resource Conservation and Recovery Act (“RCRA”). These exclusions or exemptions are each different in their degree of absoluteness and the power left to EPA. At the same time, across all three, EPA has played a key role in maintaining each of these exclusions or exemptions and has not used its full regulatory power to undo or work within them.

I. THE OIL AND GAS INDUSTRY’S PROCESSES AND IMPACTS

A. The Main Processes: Exploration and Production and Natural Gas Processing

The modern oil and gas industry is a vast network of facilities, components, and processes that runs from the exploration for and production of oil and natural gas deposits, to natural gas processing, to transportation, and through to when the processed natural gas and refined petroleum reach the market. For the purposes of this article, and for the purposes of all the exemptions considered here, the oil and gas industry considered is actually a smaller subset: the oil and gas extraction industry. This industrial sector extends from exploration and production at well sites up to the point that the crude oil and/or “pipeline-quality” natural gas are ready to be transported to market. This includes activities at the well site, such as drilling and hydraulic fracturing (“fracking”); associated components, such as storage tanks, compressor stations, and “gathering” pipelines; natural gas processing facilities; and natural gas liquids fractionation facilities. The main components that the oil and gas extraction industry does not include are transportation and transmission


3. See EPA, RIA, supra note 1, at 2-4–2-8; ENERGY INFO. ADMIN., supra note 2, at 2-4.
pipelines, oil refineries, and certain petrochemical plants, like ethane “cracker” facilities.4

Within the oil and gas extraction industry, there are two main categories of processes (sometimes broken further down to three): (1) exploration and production at the well site and (2) natural gas processing.5 The exploration and production category, as its name suggests, begins with exploration for formations associated with oil or natural gas deposits, and involves geophysical prospecting and exploratory drilling.6 Once this exploration has located an economically recoverable field, well development begins with the drilling of one or more wells.7 At this stage in the process, operators use a number of drilling muds and fluids, as described in greater detail infra, to clean and cool the drill bit, bring drill cuttings back to the surface, and prevent the collapse of the well bore.8

Once the well bore has reached a desired depth, the drill bit is steered in order to drill horizontally—usually 1,000 to 6,000 feet outward, but sometimes as far as 10,000 feet from the well.9

At this point, the process of fracking typically begins, in which millions of gallons of fluids are pumped into the well under high pressure—sometimes preceded by a charge to form initial fractures—in order to fracture the surrounding formation and release the oil and gas contained within.10 As described infra, these fracking fluids also contain a variety of toxic and hazardous constituents, though many such fluids are proprietary

---

6. See EPA, RIA, supra note 1, at 2-4; EPA, INDUSTRY SECTOR PROFILE, supra note 5, at 15.
7. See EPA, RIA, supra note 1, at 2-4; EPA, INDUSTRY SECTOR PROFILE, supra note 5, at 16.
8. EPA, INDUSTRY SECTOR PROFILE, supra note 5, at 17–18; EPA, RIA, supra note 1, at 2-4.
10. EPA, RIA, supra note 1, at 2-5.
blends for which companies claim protection as trade secrets.\textsuperscript{11} Finally, mixtures known as “proppants”—typically sand, but also other materials—are also injected in order to “prop” the fractures open.\textsuperscript{12} Once a hydraulically fractured well successfully releases natural gas from the oil and gas formation, the pressure of the natural gas pushes the injected fluids as well as the water previously trapped within the formation out of the well at high velocity, typically into a nearby surface impoundment.\textsuperscript{13} Unless this “flowback” is controlled via a “reduced emission completion,” it can result in a significant amount of air pollutants venting directly to the atmosphere.\textsuperscript{14}

Once natural gas has been extracted from a well, it must be processed to the point of becoming “pipeline-quality” gas—that is, the quality at which it can be transported via high-pressure, long-distance pipelines.\textsuperscript{15} Natural gas processing (also known as “conditioning”) is the series of methods that remove contaminants and natural gas liquids from the gas stream, specifically including water vapor, hydrogen sulfide, carbon dioxide, high-vapor-pressure hydrocarbons such as the BTEX compounds, and other gases such as nitrogen.\textsuperscript{16} Two of the most common methods involved in natural gas processing are “dehydration,” in which the gas is exposed to a glycol to remove water vapor, and “sweetening,” in which the “sour” natural gas is exposed to an amine solution and heated to remove hydrogen sulfide.\textsuperscript{17}

\textbf{B. The Toxic Chemicals the Oil and Gas Industry Uses and Releases}

In these two processes—exploration and production and natural gas processing—the oil and gas industry uses and releases a host of toxic chemicals.\textsuperscript{18}

\begin{itemize}
\item \textsuperscript{12} See EPA, RIA, supra note 1, at 2-5, 3-5.
\item \textsuperscript{13} Id. at 3-5.
\item \textsuperscript{14} Id. at 3-6.
\item \textsuperscript{15} Id. at 2-7; Major Group 13: Oil and Gas Extraction, supra note 2.
\item \textsuperscript{16} EPA, RIA, supra note 1, at 2-7–2-8; Major Group 13: Oil and Gas Extraction, supra note 2.
\item \textsuperscript{17} Major Group 13: Oil and Gas Extraction, supra note 2; EPA, RIA supra note 1, at 2-7–2-8.
\item \textsuperscript{18} Although each statute at issue here uses a different terminology for the regulated substances—e.g., RCRA’s “hazardous wastes” and the TRI’s “toxic chemicals”—this article will generally use the term “toxic chemicals,” which seems the most broadly inclusive.
\end{itemize}
First, oil and gas exploration and production use a wide range of chemicals to drill and frack wells, mobilize additional chemicals within the oil and gas formations, and release these chemicals across nearly all environmental media.\textsuperscript{19} The category that is likely most familiar to the public are the chemicals used in fracking fluids, and one of the best sources on these fluids is a 2011 report by the Minority Staff of the U.S. House of Representatives Committee on Energy and Commerce.\textsuperscript{20} The report looked at voluntary submissions by “the 14 leading oil and gas service companies” of the products and chemicals they used between 2005 and 2009.\textsuperscript{21}

From these submissions, the toxic chemicals most used by the companies, based on number of products in which they appeared, were methanol, 2-butoxyethanol, and ethylene glycol.\textsuperscript{22} The report also specifically identified 29 chemicals used by the companies that are known or possible human carcinogens, regulated under SDWA for risks to human health, and/or listed as hazardous air pollutants (“HAPs”) under the Clean Air Act.\textsuperscript{23} These included diesel, naphthalene, xylene, hydrochloric acid, toluene, ethylbenzene, and formaldehyde.\textsuperscript{24} When used as fracking fluids, these products and chemicals are mixed with a base fluid, typically water or reused wastewater, and anywhere between two to five million gallons of this mixture is injected to frack a single well.\textsuperscript{25}

In addition to fracking fluids, wells use a wide range of muds and fluids for the initial drilling of the wells. One of the most common ingredients in both onshore and offshore drilling muds is barite, which contains primarily barium sulfate but also a host of toxic metals, such as mercury, cadmium, and chromium.\textsuperscript{26} Additional toxic constituents used in drilling and other well development practices include propargyl alcohol, a common corrosion


\textsuperscript{20} HOUSE COMM. REPORT, supra note 11, at 1, 5.

\textsuperscript{21} Id. at 4–5.

\textsuperscript{22} Id. at 6.

\textsuperscript{23} Id. at 8.

\textsuperscript{24} Id. at 8, Table 3.


\textsuperscript{26} U.S. ENVTL. PROT. AGENCY, DEVELOPMENT DOCUMENT FOR PROPOSED EFFLUENT LIMITATIONS GUIDELINES AND STANDARDS FOR SYNTHETIC-BASED DRILLING FLUIDS AND OTHER NON-AQUEOUS DRILLING FLUIDS IN THE OIL AND GAS EXTRACTION POINT SOURCE CATEGORY VII-4, VII-6 (1999) [hereinafter EPA, PROPOSED EFFLUENT LIMITATIONS FOR DRILLING FLUIDS].
inhibitor;\textsuperscript{27} heavy naphtha, a lubricant that contains the toxic BTEX compounds;\textsuperscript{28} and Duratone HT, a filtration control agent for drilling that contains nonylphenol.\textsuperscript{29}

An additional set of toxic chemicals are those that are already present in the gas formation and will be mobilized as drill cuttings and flowback water.\textsuperscript{30} Within the Marcellus shale formation, these chemicals include lead, arsenic, barium, chromium, uranium, radium, radon, and benzene.\textsuperscript{31} Drill cuttings can also contain naturally occurring radioactive materials (“NORMs”), which have proven to be a problem for the disposal of these wastes in landfills not capable of handling them.\textsuperscript{32}

These toxic chemicals are released to all environmental media through a variety of mechanisms. For example, wastewater (i.e., flowback water and produced water) has contaminated groundwater aquifers by leaching through pits and impoundments, faulty well casing, and natural or fracking-related pathways.\textsuperscript{33} Surface water discharges have occurred due to well “blowouts,” spills, and other accidents.\textsuperscript{34} Contamination of surface water also occurs when oil and gas wastewater is improperly sent to public wastewater treatment plants, which are incapable of removing certain


\textsuperscript{28} Id. at 8–9 (citing AM. AGIP CO., MATERIAL SAFETY DATA SHEET: HEAVY NAPHTHA (2006)).

\textsuperscript{29} GLENN A. MILLER, RISKS ASSOCIATED WITH PERMITTING EXPLORATIONWELLS IN THE DELAWARE RIVER BASIN 3 (2010).

\textsuperscript{30} BISHOP, supra note 27, at 9.

\textsuperscript{31} Id. at 9–11 (citing Lisa Sumi, Earthworks, Shale Gas: Focus on the Marcellus (2008)).


\textsuperscript{34} TRI Petition, supra note 19, at 48–50.
constituents such as salts and radioactive materials, and end up releasing these materials into the receiving water.\textsuperscript{35}

Operators also send oil and gas wastewater to underground injection wells, of which there are now 172,000 nationwide, and which accept two billion gallons of oil and gas wastewater per day.\textsuperscript{36} Solid wastes, such as drill cuttings, drilling muds, and fracking sands, are sent to solid waste landfills.\textsuperscript{37} This has become a problem over the past several years, as the growing amount of oil and gas solid waste has resulted in many private and municipal landfills receiving oil and gas waste that they are incapable of handling.\textsuperscript{38} Finally, air emissions are also a means of release for these wastes, primarily via evaporative loss from wastewater impoundments.\textsuperscript{39}

The New York State Department of Environmental Conservation recently estimated that a single central impoundment at a well could emit 32.5 tons of methanol per year.\textsuperscript{40}

Second, natural gas itself contains a large number of toxic constituents, which the oil and gas industry releases through well completions, leaks, storage, and processing. EPA has estimated—prior to its implementation of certain air controls that will partially address the problem—that the industry releases roughly 127,000 tons of hazardous air pollutants annually.\textsuperscript{41} EPA has made several estimates of the toxic constituents in natural gas, depending on the gas stream’s stage of production or processing.\textsuperscript{42} These

\begin{thebibliography}{99}
\bibitem{35} Id. at 50–51.
\bibitem{36} Id. at 52–53; \textit{see} Gov’t Accountability Office, U.S. Envtl. Prot. Agency Program to Protect Underground Sources from Injection of Fluids Associated With Oil and Gas Production Needs Improvement 1 (June 2014) [hereinafter GAO, Underground Injection], available at http://www.gao.gov/assets/670/664499.pdf [http://perma.cc/N92C-P6ZF].
\bibitem{37} TRI Petition, \textit{supra} note 19, at 53–55.
\bibitem{38} Id. at 54–55.
\bibitem{39} Id. at 55–56.
\bibitem{40} Id. at 56.
\end{thebibliography}
constituents include hydrogen sulfide, n-hexane, benzene, toluene, ethylbenzene, and xylenes. 43

Third, and finally, the industry uses and releases a number of different toxic chemical constituents in its processing of natural gas. For example, dehydrators most commonly use glycols to absorb water from wet gas, including the toxic ethylene glycol. 44 They also emit a significant amount of hazardous air pollutants, and in particular the BTEX compounds, from leaks and venting during their operation. In EPA’s recent air rule, it estimated that its controls on small glycol dehydrators would result in an average reduction of 6.8 tons per year of hazardous air pollutants per unit. 45 Gas sweetening commonly uses an amine solution—including the toxic diethanolamine—to remove hydrogen sulfide from “sour gas.” 46 The toxic hydrogen sulfide that is recovered from the process is sometimes captured and sold as elemental sulfur, but also may be vented or flared. 47

II. THE OIL AND GAS INDUSTRY’S EXEMPTIONS

The oil and gas industry undoubtedly is exempt from a large amount of provisions of environmental laws. Indeed, there are so many exemptions that there are countless articles, guides, and other publications devoted to the topic. 48 This article does not attempt to rebut this point. Rather, through looking at three specific exemptions—the exclusion of the oil and gas...
industry from the TRI, the Halliburton Loophole to SDWA, and the Bentsen Amendment to RCRA—this article aims to add two key points.

First, EPA has played a major role in developing these exemptions and keeping them in place. While Congress enacted the exemptions, EPA had involvement in maintaining the exemptions and, in two cases, laying the groundwork for Congress’s enactment. Second, the exemptions are not the end of the story. That is, the passage of additional laws to undo the exemptions is not the only solution; EPA retains great power to undo or lessen the exemptions and to work within them.

That being said, it is helpful to understand the greater context of the oil and gas industry’s exemptions. There are a number of other exemptions outside the three discussed in this article, and each is worthy of its own article and set of solutions.

A. The Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA” or “Superfund”) governs the notification and cleanup of hazardous substance releases, including provisions for liable parties, reporting, and the federal “Superfund” that pays for abandoned site cleanup.49 Given that the law’s key provisions hinge on the release of a “hazardous substance” having occurred,50 Congress wrote CERCLA’s hazardous substance definition to broadly incorporate by reference substances deemed hazardous or toxic by other environmental laws.51 The one exception to this is that the definition “does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance” under the referenced environmental laws, “and the term does not include natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel.”52 This exemption has come to be known as the “petroleum exclusion.”53

In spite of the petroleum exclusion’s direct and unique aim at petroleum and natural gas, which “gives oil and gas companies little incentive to prevent and clean up spills,”54 there is room to argue that the exclusion has gaps that could be used to address releases at modern gas wells.

49. Brady & Crannell, supra note 48, at 51.
50. 42 U.S.C. §§ 9601(9), (22), 9603(a), 9607(a)-(c) (2012); 42 U.S.C. §§ 9607(a)-(c) (2006); Kosnik, supra note 48, at 4.
53. Kosnik, supra note 48, at 5.
54. Brady & Crannell, supra note 48, at 52.
Specifically, the natural gas provision of the exclusion does not include the “any fraction thereof” language in the petroleum provision, and it includes the modifier “usable for fuel.” As discussed supra, natural gas is not transported to market—i.e., usable for fuel—until processing has removed hydrogen sulfide, a number of other toxic constituents, and natural gas liquids.55 For this reason, one could argue that a release of unprocessed natural gas or a release of the constituents removed by processing is not exempt and still should trigger CERCLA’s liability and notification provisions.

B. The Clean Water Act

Congress enacted the Clean Water Act with the goal “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”56 The primary mechanism by which the Act is meant to achieve this goal is the prohibition on discharges into waters of the United States, unless permitted by EPA or a state permitting authority.57 Congress supplemented this authority in 1987, adding the ability for EPA and the states to issue permits for stormwater pollution.58 At the same time, Congress exempted stormwater from “oil and gas exploration, production, processing, or treatment operations or transmission facilities” from these permitting requirements, provided that such stormwater does not come into contact with any wastes on site.59

After EPA (correctly) read this provision as requiring the permitting of sediment-laden stormwater resulting from the construction of oil and gas sites, Congress amended the Act again, via the Energy Policy Act of 2005.60 In this amendment, Congress redefined the Clean Water Act’s definition of “oil and gas exploration and production” to include construction of oil and gas sites.61 Under Congress’s theory, this would have exempted well pad construction from the Clean Water Act’s stormwater permitting, but once again Congress’s language did not go far enough to achieve that. Environmental groups challenged the resulting EPA rule that exempted oil and gas construction stormwater on this basis, and

55. See supra Part II. A.
57. 33 U.S.C. §§ 1311(a), 1342(a).
the U.S. Court of Appeals for the Ninth Circuit agreed, finding that the language of the Clean Water Act did not provide for such an exemption.62

Accordingly, even though Congress has made two attempts at exempting it, contaminated stormwater from oil and gas facilities is still covered by the Clean Water Act’s permitting requirements.63

C. The Clean Air Act

The Clean Air Act is the environmental law that regulates emissions from stationary sources, mobile sources, and area sources.64 The Act achieves this by setting National Ambient Air Quality Standards, which state environmental agencies meet and implement through their State Implementation Plans, and through the National Emission Standards for Hazardous Air Pollutants.65

The issue for the oil and gas industry comes about with respect to the Clean Air Act’s provision that allows smaller sources to be “aggregated” and regulated as a major source, provided that they are “within a contiguous area” and “under common control.”66 This is important, given that these smaller sources collectively may have a large hazardous emissions footprint without individually meeting the required thresholds for regulation under the Clean Air Act.67

While this aggregation provision would seem to be appropriate for the regulation of large groups of oil and gas wells operated by one company,68 the Clean Air Act specifically exempts oil and gas wells, compressor stations, and pump stations from aggregation as major sources, “whether or not such units are in a contiguous area or under common control.”69 The Act also exempts most oil and gas wells from consideration by EPA as small “area sources,” another means by which EPA could attempt to regulate the wells.70 Congress added an additional exemption in 1991 when it struck hydrogen sulfide from the list of hazardous air pollutants.71

64. Brady & Crannell, supra note 48, at 50; KOSNIK, supra note 48, at 12–13.
65. KOSNIK, supra note 48, at 12–13.
66. Brady & Crannell, supra note 48, at 50.
67. Id. at 51.
68. See infra notes 119–120 and accompanying text for a discussion of such groups of wells in the context of the TRI.
Hydrogen sulfide is a common pollutant at oil and gas operations that produce “sour” gas, and it has particularly dangerous human health impacts, including rapid death.\(^{72}\)

For these reasons, most oil and gas wells are effectively exempt from the Clean Air Act’s hazardous emissions regulations.\(^{73}\)

### D. The National Environmental Policy Act

The National Environmental Policy Act ("NEPA") establishes the decision-making framework for considering a “federal action’s” alternatives and full range of environmental impacts.\(^{74}\) This is important for oil and gas operations, as many of them occur on federal lands and are therefore federal projects. In 2005, the Energy Policy Act—which also enacted exemptions under the Clean Water Act and SDWA—enacted an exemption under NEPA for certain oil and gas exploration and development occurring on lands managed by the Department of the Interior or the Department of Agriculture.\(^{75}\) Under this exemption, there is a “rebuttable presumption” that such activities should be considered a “categorical exclusion” and therefore not given the full analysis under NEPA.\(^{76}\) The effect is that these oil and gas activities on federal public lands may go forward without a proper analysis of their reasonable alternatives, impacts, and effects.

### E. The Exemptions Investigated in this Article: TRI, SDWA, and RCRA

This article will examine exemptions and exclusions under three other environmental laws toward demonstrating the premises that EPA has played a key role in implementing and maintaining these exemptions and that there is still much that EPA can do on its own to undo these exemptions and work within them.

First, the oil and gas industry’s exclusion from the TRI is the least of the three like a “traditional” exemption, and it is also the one in which EPA maintains the most power to act. Second, the Halliburton Loophole of SDWA is the most like a traditional exemption and the one in which EPA has the least discretion. At the same time, EPA laid much of the


\(^{73}\) Brady & Crannell, supra note 48, at 51.

\(^{74}\) Id. at 52.

\(^{75}\) Id. (citing 42 U.S.C. § 15942(a) (2006)).

\(^{76}\) 42 U.S.C. § 15942(a) (2012).
groundwork for the exemption, and it still has authority to work within the exemption, which it has used in only the barest way. Third, the Bentsen Amendment to RCRA is a complicated middle ground between the first two. Congress enacted the exemption on the basis of EPA’s reasoning, but it also provided EPA with certain ways to undo or work within the exemption. For nearly three decades, EPA has opted not to use either of these mechanisms.

III. THE TOXICS RELEASE INVENTORY

The first exemption this article considers—the TRI—is also the simplest of the three and the least like a traditional exemption. For this same reason, it is also the one over which EPA has the most control and the least restrictions. To state it in the simplest terms, the oil and gas industry—or, more specifically, the oil and gas extraction industry, as defined supra—is not currently one of the industry sectors whose facilities must comply with the TRI.\(^77\)

This is because when Congress enacted the TRI as part of EPCRA in 1986, it did not include the oil and gas extraction industry among the list of industries required to report. At the same time, Congress did not exclude the industry from future addition. Rather, Congress left EPA with wholly unrestricted power to add the oil and gas extraction industry or any other industry sector to the TRI as the agency saw fit.

Since the TRI’s enactment, EPA has only added additional industries to the TRI once, when it added seven sectors in 1997. Among the sectors that EPA deferred adding was the oil and gas extraction industry. While EPA stated at that time that it would revisit the oil and gas extraction industry in the future, it has never done so, nor has it formally added or considered any additional industry sectors since then. In a way, because EPA has unrestricted yet unused power, this is the clearest example of this article’s themes: (1) the exemption’s force is sustained entirely by EPA’s inaction, and (2) there is still much that EPA can do to improve the oil and gas extraction industry’s regulation under the TRI.

\(^{77}\) See supra Part II. A.
A. How We Got Here: The Oil and Gas Extraction Industry’s Continued Exclusion from the TRI

Congress enacted the TRI as section 313 of EPCRA in 1986.\(^78\) EPCRA was largely “in response to concerns regarding the environmental and safety hazards posed by the storage and handling of toxic chemicals,” which had come about in the aftermath of the 1984 “Bhopal disaster.”\(^79\) In that case, a Union Carbide pesticide manufacturing plant accidentally released a cloud of methyl isocyanate gas, killing nearly 4,000 people and injuring tens of thousands more.\(^80\) A subsequent toxic chemical release from a similar Union Carbide chemical plant in West Virginia solidified the call for a greater public “right to know” and better emergency planning, leading to EPCRA’s 1986 passage.\(^81\)

As enacted, section 313 of EPCRA requires facilities within certain industry sectors to report their annual releases of certain toxic chemicals to the TRI, provided the facilities used over a certain threshold amount of each chemical to be reported and employed ten or more regular employees.\(^82\) As of the date of this article’s publication, “[t]he current TRI toxic chemical list contains 594 individually-listed chemicals and 31 chemical categories (including four categories containing 68 specifically-listed chemicals),” for a total of 689 TRI-listed chemicals and chemical categories.\(^83\)

Congress initially applied the TRI’s requirements only to facilities within the manufacturing industry sectors, as identified by Standard Industrial Classification Codes (“SIC Codes”) 20 through 39, likely due to the role of manufacturing plants as impetus for EPCRA.\(^84\) At the same time, Congress gave EPA the ability to add (or delete) industry sectors as the

\(\quad\)

---


\(^81\) 25 Years of EPCRA, supra note 80.


\(^84\) 42 U.S.C. § 11023(b)(1)(A).
agency saw fit, provided that such addition or deletion “is relevant to the purposes of this section.”

In other words, EPA has broad authority to add any additional SIC Codes to the requirements of the TRI, bound only by the directive that any such addition be relevant to the purposes of the TRI. As articulated by EPA, the purposes of the TRI program are also broad: “(1) [p]roviding a complete profile of toxic chemical releases and other waste management activities; (2) compiling a broad-based national database for determining the success of environmental regulations; and (3) ensuring that the public has easy access to these data on releases of toxic chemicals to the environment.”

In spite of this nearly unrestricted authority, EPA did not act on it for almost ten years after the enactment of EPCRA. Then, in 1995, President Clinton issued a memorandum to EPA entitled “Expediting Community Right-to-Know Initiatives,” in which the President noted his “commit[ment] to the effective implementation of this law” and EPA’s “substantial authority to add to the Toxics Release Inventory under EPCRA . . . new classes of industrial facilities.” For this reason, President Clinton directed EPA to continue rulemaking to add to the list of TRI industry sectors “on an expedited basis” and to complete this rulemaking “on an accelerated schedule.”

EPA followed on this directive in 1996 with a proposed rule in which the agency proposed to add seven new industry sectors to the TRI. Specifically, EPA proposed to add the metal mining, coal mining, electric utilities, commercial hazardous waste treatment, chemicals and allied products-wholesale, petroleum bulk stations-wholesale, and solvent recovery services industry sectors. EPA chose these seven sectors through an in-depth screening process, starting first with the overall group of non-

85. 42 U.S.C. § 11023(b)(1)(B); see also 42 U.S.C. § 11023(b)(2) (granting EPA broad discretion to add additional facilities to the TRI if EPA “determines that such action is warranted on the basis of toxicity of the toxic chemical, proximity to other facilities that release the toxic chemical or to population centers, the history of releases of such chemical at such facility, or such other factors as [EPA] deems appropriate”).


88. Id.


90. Id.
manufacturing sectors that were not yet required to report to the TRI.\textsuperscript{91} From there, EPA reviewed the data available to determine the volume of TRI-listed toxic chemicals used and released by each sector. Over 99\% of the chemicals released came from 25 industry sectors, which EPA called the “Tier I” list.\textsuperscript{92}

Rather than just adding these 25 sectors, thereby covering the vast majority of toxic chemical releases not yet reported to the TRI and arguably fulfilling both President Clinton’s directive and the purposes of the TRI, EPA decided to narrow the list further. To do so, the agency looked at the manufacturing industry sectors already covered by the TRI and compared these to the 25 Tier I sectors, in order to determine “those industries that either supply or otherwise manage chemicals and related materials both to and from the point of manufacturing.” EPA’s rationale was that “fill[ing] in gaps associated with chemical management activities currently reported” was a “primary objective” of its rulemaking.\textsuperscript{93} This resulted in narrowing the sectors to ten candidates.

Again, EPA did not simply add the industry sectors from this smaller list, but continued to screen the candidate sectors against a further series of considerations, including “overlay of regulatory definitions and developments, existing program guidance, and any exemptions pertinent to activities identified for the primary candidates,” and input from representatives of the industry sectors.\textsuperscript{94}

Finally, “after the application of the screening process,” EPA used several “additional considerations” to exclude certain industry sectors.\textsuperscript{95} It was one of these additional considerations that resulted in EPA deferring the addition of the oil and gas extraction sector.\textsuperscript{96} While EPA “believed” that the oil and gas extraction industry “conduct[ed] significant management activities that involve EPCRA section 313 chemicals,” it opted to “defer[ ] action to add this industry group at this time because of questions regarding how particular facilities should be identified.”\textsuperscript{97} Specifically:

This industry group is unique in that it may have related activities located over significantly large geographic areas. While together these activities may involve the

\begin{itemize}
\item \textsuperscript{91} \textit{Id.} \textsuperscript{at} 33,591.
\item \textsuperscript{92} \textit{Id.}
\item \textsuperscript{93} \textit{Id.}
\item \textsuperscript{94} \textit{Id.} \textsuperscript{at} 33,592.
\item \textsuperscript{95} \textit{Id.}
\item \textsuperscript{96} \textit{Id.}
\item \textsuperscript{97} \textit{Id.}
\end{itemize}
management of significant quantities of EPCRA section 313 chemicals in addition to requiring significant employee involvement, taken at the smallest unit (individual well), neither the employee nor the chemical thresholds are likely to be met.98

EPA stated that it “will be addressing these issues in the future,” and ultimately opted not to include the oil and gas extraction industry in the group of industry sectors proposed for addition to the TRI.99

Although EPA did not explicitly say so, the question of how to define facilities within the oil and gas extraction industry ties in directly with a set of three primary factors that EPA also developed in the proposed rule “to consider in determining whether the statutory standard would be met by addition of the candidate facilities in industry groups under EPCRA section 313(b)(1)(B).”100 As discussed earlier, Congress provided EPA with broad authority to add industry sectors to the TRI, subject only to the requirement that such addition be “relevant to the purposes of” the TRI.101 EPA agreed this discretion was “broad,” echoing a strong sentiment put forward by the U.S. Government Accountability Office (“GAO”) in an earlier report that critiqued EPA’s failure to use this authority.102 But EPA apparently had expressed “concerns” about using this authority and later, in the final rule, characterized its authority as “not unlimited.”103

For this reason, EPA interpreted the language of the statute to develop three factors it would use in deciding whether to add a candidate industry to the TRI: (a) “Whether one or more toxic chemicals are reasonably anticipated to be present at facilities within the candidate industry group” (the “chemical factor”); (b) “whether facilities within the candidate industry group ‘manufacture,’ ‘process,’ or ‘otherwise use’ these toxic chemicals” (the “activity factor”); and (c) “whether facilities within the candidate industry group can reasonably be anticipated to increase the information

98. Id.; see also U.S. ENVTL. PROT. AGENCY, ADDITIONAL CONSIDERATIONS IN SELECTING INDUSTRIES FOR ADDITION TO EPCRA SECTION 313 at 3 (1996).
100. Final Sector Addition Rule, supra note 86, at 23,836.
101. 42 U.S.C. § 11023(b)(1)(B); see also MOULTON & PLAGAKIS, supra note 9 and accompanying text.
102. See Proposed Sector Addition Rule, supra note 89, at 33,593 (citing U.S. GOV’T ACCOUNTABILITY OFFICE, TOXIC CHEMICALS: EPA’S TOXIC RELEASE INVENTORY IS USEFUL BUT CAN BE IMPROVED (1991)).
103. Proposed Sector Addition Rule, supra note 89, at 33,593; Final Sector Addition Rule, supra note 86, at 23,836.
made available pursuant to EPCRA section 313, or otherwise further the purposes of EPCRA section 313” (the “information factor”).

The first and second factors are seemingly straightforward, and EPA found that the oil and gas extraction industry clearly met them. The problem seems to have been that, if “facilities” are defined as the smallest possible units—individual wells—then these facilities may not exceed the necessary chemical or employee thresholds needed for a facility to require reporting. This issue ties in with the “information factor” since the addition of an industry is meant to give the public more information. If facilities within a candidate industry will not actually report to the TRI because they cannot meet the reporting thresholds, EPA’s theory is that this would weigh against the industry’s addition to the TRI.

Even though it may be useful for purposes of rulemaking to have these factors, using the “information factor” in this way seems like an unnecessary constraint on EPA’s authority and is at odds with the overall purposes of the TRI. For example, even if individual oil and gas wells fit within the proper definition of “facilities,” and this results in the majority or entirety of the industry not reporting to the TRI, it still does not make sense for EPA to exclude the entire industry sector from the TRI. If just one facility from the industry were to report to the TRI, this would certainly increase the information made available to the public.

Congress did not command EPA to only add industry sectors that have a certain number of reporting facilities. Rather, Congress left the decision completely up to EPA, so long as the addition would further the purposes of the TRI. Indeed, many of the industries that Congress added in its own original sweep of SIC Codes 20 through 39 have very few reporting units. For example, in reporting year 2013, the apparel industry sector only had three reporting facilities, and the leather manufacturing industry sector only had 27 reporting facilities. In fact, even industries that EPA chose to add in the 1996–97 rulemaking have less than 100 reporting facilities: coal mining had 59 facilities in reporting year 2013, and metal mining had 88.

104. Final Sector Addition Rule, supra note 86, at 23,836.
105. Proposed Sector Addition Rule, supra note 89, at 33,592.
106. Id.; see also infra notes 119–120 and accompanying text.
108. 42 U.S.C. § 11023(b)(1)(B); see also MOULTON & PLAGAKIS, supra note 9 and accompanying text.
110. Id.
As demonstrated infra, the oil and gas extraction industry has at least hundreds of large facilities that would report to the TRI, if not thousands.\(^{111}\)

As the GAO stated in its 1991 report:

[TRI] data must be as comprehensive as possible, with the data from additional emissions sources and on additional toxic chemicals. The concerns EPA expressed should be carefully considered. However, these concerns should not override efforts to make the inventory more comprehensive—especially since policymakers and the public need the data to establish environmental priorities and to better measure progress in reducing pollution.\(^{112}\)

Of course, it would be useful for EPA to make a decision on how facilities within a specific industry should be defined, so that it can assist operators in determining whether and how facilities should report. This is a procedural consideration though, and should not keep EPA from adding an industry sector to the TRI, particularly where that sector “conduct[s] significant management activities that involve [toxic] chemicals.”\(^{113}\)

In any case, EPA opted not to include the oil and gas extraction industry sector in its 1996 proposed rulemaking and, in spite of its intention to “address[] these issues in the future,” has not formally reconsidered the industry since then.\(^{114}\) In fact, the addition of the seven industry sectors in the 1997 final rulemaking was the only time EPA has added any industries to the TRI.

Although EPA has “broad authority” to add industry sectors to the TRI, and it has received encouragement from the President and the GAO to use this authority freely, it has only done so once in the TRI’s nearly 30 year history.

B. Ways Forward: How EPA Can Undo the TRI Exclusion

From the history of the TRI, the first premise of this article is apparent: the continued exclusion of the oil and gas extraction industry from the TRI is mostly—if not entirely—due to EPA. Unlike the exemptions under

---

111. See infra Part III. B., note 121 and accompanying text.
113. Proposed Sector Addition Rule, supra note 89, at 33,592.
114. Id.
SDWA and RCRA, discussed infra, Congress’ exclusion of the oil and gas extraction industry from the TRI was merely a starting point, not an exemption.\footnote{Id. at 33,589.} Congress left EPA with virtually unlimited authority to add the oil and gas extraction industry or any other industry sector to the TRI, subject only to the requirement that such addition be relevant to the purposes of the TRI. For reasons known only to EPA, the agency has used this authority exactly once in almost 30 years.

Turning to the second premise of this article, there is much that EPA can do to improve the TRI exclusion. In fact, unlike SDWA and RCRA, EPA can completely undo the oil and gas industry’s exclusion. There are no external restrictions to EPA’s ability to act. If it so chose, it could propose rulemaking to add the industry tomorrow.

This is what EPA recently appears to have been doing—albeit in very early and informal stages—for several other industry sectors that were excluded in 1996. In late 2011, EPA commenced an online “discussion forum” in order to “define the scope of a potential forthcoming rule” for the addition of six industry sectors to the TRI: “Iron Ore Mining, Phosphate Mining, Solid Waste Combustors and Incinerators, Large Dry Cleaning, Petroleum Bulk Storage, and Steam Generation from Coal and/or Oil.”\footnote{Although the discussion forum website is no longer active, an archived version is available on the Internet Archive Wayback Machine. U.S. Envtl. Prot. Agency, TRI Industry Sectors Expansion, https://web.archive.org/web/20120819003819/http://exchange.regulations.gov/topic/trisectorsrule (last visited Apr. 1, 2015).} Notably, all but one of these six sectors in the discussion forum were either sectors that EPA previously had deferred adding—like the oil and gas extraction industry—or expansions of sectors added in the 1996 and 1997 rulemakings.\footnote{Proposed Sector Addition Rule, supra note 89, at 33,592; Final Sector Addition Rule, supra note 86, at 23,859.} Although the oil and gas extraction industry was not included among these six sectors, one commenting organization noted the absence of significant contributors, such as the oil and gas extraction industry, and recommended that “EPA should take immediate steps to review and add such polluting industry sectors to TRI.”\footnote{See TRI PETITION, supra note 19, at 21.}

On October 24, 2012, the Environmental Integrity Project and sixteen other organizations made this request formally, submitting a “Petition to Add the Oil and Gas Extraction Industry, Standard Industrial Classification Code 13, to the List of Facilities Required to Report under the Toxics Release Inventory” (“Petition”) to EPA Administrator Lisa Jackson.\footnote{Id. at 1.} The
Petition specifically requested that EPA revisit its 1996 decision and initiate formal rulemaking to add the oil and gas extraction industry to the list of industry sectors required to report to the TRI.

In particular, the Petition noted that, even if EPA had made the correct decision in 1996 (to omit oil and gas extraction from the TRI), the industry had changed and expanded so much in the intervening decade and a half to warrant its addition to the TRI.\textsuperscript{120} The Petition addressed EPA’s chemical and activity factors, noting the wide variety of chemicals used and released in drilling, fracking, natural gas processing, and other industry activities and facilities.\textsuperscript{121}

With respect to the “information factor,” the Petition approached this in three main ways. First, the Petition addressed the existing federal and state laws that cover the oil and gas industry, noting in particular the number of exemptions in federal laws, the lack of uniformity in state disclosure rules, and therefore how the industry’s addition to the TRI would greatly increase public information.\textsuperscript{122} Second, the Petition looked specifically at well pads as individual facilities and the amount of TRI-listed toxic chemicals they use that exceed the TRI’s 10,000-pound chemical threshold. For example, the Petition noted that individual Marcellus shale wells have released as much as 26,000 pounds of methanol across all environmental media.\textsuperscript{123} Third, the Petition addressed the question of whether multiple well pads could constitute a single facility. To this end, the Petition considered certain areas, such as Dimock, Pennsylvania, and the Jonah Field of Wyoming, in which single oil and gas operators collectively operate large, concentrated groups of well pads. For example, the Petition noted that Cabot Oil and Gas Corporation operated nearly 140 wells within a 3.5-mile radius in Dimock, Pennsylvania.\textsuperscript{124} Similarly, Encana Oil and Gas USA, Inc. operated over 1,700 wells on Wyoming’s Jonah Field, with 90 of these wells located within just one square mile.\textsuperscript{125}

In a submission to the Petition’s regulatory docket in January 2014, Petitioners addressed the information factor from another angle: that there are hundreds if not thousands of large facilities in the oil and gas extraction industry that are clearly well-defined facilities and would certainly exceed
the chemical thresholds.\textsuperscript{126} Looking at a sample of six states with a large oil and gas industry presence, Petitioners reviewed air emissions data reported by certain oil and gas facilities, such as natural gas processing plants, compressor stations, natural gas liquid fractionators, and wastewater processing facilities.\textsuperscript{127} From this data, Petitioners found that nearly 400 facilities released at least one TRI-listed toxic chemical above the chemical threshold on an annual basis, clearly enough reporting facilities that the information to the public would be greatly increased by the industry’s addition.\textsuperscript{128}

These numbers are even more notable if one considers: (1) that these facilities are within just six states, and (2) because only emissions data was available, Petitioners calculated the threshold numbers from the chemicals released by the facilities, rather than the chemicals used.\textsuperscript{129} The TRI requires that the threshold calculation be based on the chemicals used, a number which is invariably much higher than the ultimate amount released.\textsuperscript{130} If Petitioners had the data on the amount of chemicals used by the facilities (i.e., the “throughput”), the number of facilities exceeding the chemical threshold would undoubtedly be much higher.\textsuperscript{131}

The letter also noted a matter of arbitrariness at the heart of the oil and gas extraction industry’s exclusion from the TRI. That is, the TRI covers (or excludes) industry facilities on the basis of their SIC Codes, and the SIC Codes, as a matter of necessity, have drawn lines between certain processes and facilities.\textsuperscript{132} For this reason, certain downstream oil and gas facilities are required to report—such as oil refineries and ethane steam cracking facilities—because their SIC Codes are within the set of manufacturing sectors.\textsuperscript{133} Slightly upstream, the facilities within the oil and gas extraction industry that provide the oil, natural gas, and natural gas liquids that serve as the feedstock for refineries and petrochemical plants need not report to

\begin{footnotes}
\footnote{127. Id. at 1–2, 8, Table 2.}
\footnote{128. Id. at 3–4.}
\footnote{129. Id.}
\footnote{131. Facility Emissions Letter, supra note 126, at 1.}
\footnote{132. Id. at 4.}
\footnote{133. Id.}
\end{footnotes}
the TRI. 134 The public is able to access TRI reports from one part of the supply chain, but not the other. EPA’s continued choice to exclude SIC Code 13—the oil and gas extraction industry—perpetuates this arbitrariness.

On January 7, 2015, over two years after filing the Petition with no formal response from EPA, Petitioners filed a lawsuit against EPA for its “unreasonable delay” in making this required response.135 On April 24, 2015, Petitioners and EPA filed a joint motion to stay all the case, in consideration of EPA’s statement that it would finally respond to the Petition by October 30, 2015.136 While this does not guarantee that EPA will finally add the oil and gas extraction industry to the TRI, it would be the first formal action taken by the agency with respect to the oil and gas extraction industry—or, for that matter, for any industry sector currently excluded from the TRI—for the first time in almost 20 years.

The oil and gas extraction industry’s exclusion from the TRI is the least like an “exemption,” in the traditional sense, of the three statutes discussed in this article. Congress did not specifically exempt the oil and gas extraction industry from the TRI’s coverage, but rather added the manufacturing sectors and gave EPA nearly unlimited authority to add the remaining industry sectors. In nearly 30 years, EPA has used this broad authority exactly once, and even then it sought out ways in which it could narrow and add constraints to this authority to make a small and limited addition of sectors.

In this way, one can see that EPA bears almost complete responsibility for implementing, maintaining, and failing to undo this particular exemption of the oil and gas industry.

IV. THE SAFE DRINKING WATER ACT AND THE “HALLIBURTON LOOPHOLE”

The second exemption explored here is the most in line with what one expects of an oil and gas industry exemption. In 2005, Congress specifically amended SDWA to exclude fracking from the definition of “underground injection,” thereby exempting it from SDWA’s Underground Injection Control (“UIC”) program.137 The limited exception Congress left

134. Id.
in place is where fracking uses diesel fuel. For this reason, of the three exemptions explored in this article, the SDWA exemption is the one that EPA has the least discretion to undo. Absent a subsequent amendment by Congress, EPA is stuck with this very limited authority for the foreseeable future.

That being said, this exemption also clearly demonstrates this article’s premise: first, EPA paved the way for this exemption. It avoided using its SDWA authority to regulate fracking for decades, strongly argued against the fact that it possessed this authority, and drafted a report demonstrating why the authority was unnecessary. Congress’s enactment of the exemption merely fulfilled what EPA had been attempting to do for decades. Second, even under this exemption, EPA has unused authority. Namely, EPA has the ability and responsibility to regulate fracking that uses diesel fuel. In the ten years since the enactment of the exemption, however, neither EPA nor the state agencies have issued a single UIC permit to a fracking operation that uses diesel fuel.

In short, while the surface-level perception of the SDWA exemption may be that it was an injustice done by Congress at the behest of oil and gas interests, the story both leading up to, and since, the exemption entirely belongs to EPA.

A. How We Got Here: The Road to the Halliburton Loophole

Congress enacted SDWA in 1974, with the goal of protecting the quality of public drinking water. Because of the importance of groundwater sources of drinking water, Part C of SDWA established the UIC program and required EPA to promulgate minimum standards for state UIC programs. In order for a state to administer its own UIC program, including permitting and enforcement, it must demonstrate to EPA that it is capable of meeting these minimum requirements. Included within these minimum requirements is the requirement that the state “shall prohibit . . . any underground injection . . . which is not authorized by a permit issued by

140. Brady & Crannell, supra note 48, at 43.
142. LEAF, 118 F.3d at 1469–70.
the State.”143 As enacted in 1974, SDWA broadly defined “underground injection” as “the subsurface emplacement of fluids by well injection.”144 For the purposes of the eventual exemption, the problem arose in that a plain reading of this definition appears to include fracking. From SDWA’s 1974 enactment until the 1990s, however, neither EPA nor the states regulated fracking under the UIC program.145 Simultaneously, fracking was beginning to find a niche as a key technique to increase natural gas production from coalbed methane (“CBM”) formations.146 Within a few years, the number of CBM wells in the United States had increased rapidly, from less than 100 wells in 1984 to over 8,000 wells in 1990.147 Because of this rapid growth and lack of any permitting under the State of Alabama’s UIC program, the environmental organization Legal Environmental Assistance Federation (“LEAF”) petitioned EPA in 1994 to withdraw its approval of Alabama’s program.148 LEAF specifically raised the minimum requirement that a state must prohibit any underground injection that “is not authorized by a permit issued by the State.”149 Given that Alabama neither permitted fracking under its UIC program, nor prohibited it without such a permit, LEAF claimed that Alabama’s UIC program violated this minimum requirement.150

In 1995, EPA denied LEAF’s petition on the grounds that fracking did not fall within SDWA’s definition of “underground injection.”151 In EPA’s view, the definition covered “only those wells whose ‘principal function’ is the underground emplacement of fluids.”152 Because CBM wells’ principal function is the production of natural gas, EPA asserted that they did not fall under the definition.153

LEAF challenged EPA’s decision in the U.S. Court of Appeals for the Eleventh Circuit, and in 1997 the court agreed with LEAF that SDWA covers fracking.154 Looking at SDWA’s definition of “underground injection”—“the subsurface emplacement of fluids by well injection”—the

---

143. 42 U.S.C. § 300h(b)(1)(A); LEAF, 118 F.3d at 1469–70 (citing 40 C.F.R. §§ 144.11, 145.11(a)(5)).


145. TIEMANN & VANN, supra note 139, at 15.

146. Id. at 2.

147. Id. As of 2008, EPA has identified over 56,000 CBM wells in the United States. Id.

148. Id. at 15; CLEAN WATER ACTION, REGULATING OIL & GAS ACTIVITIES TO PROTECT DRINKING WATER: THE SAFE DRINKING WATER ACT’S UNDERGROUND INJECTION CONTROL PROGRAM—OVERVIEW AND CONCERNS 5 (2015).

149. LEAF, 118 F.3d at 1474; 42 U.S.C. § 300h(b)(1)(A).

150. LEAF, 118 F.3d at 1471.

151. TIEMANN & VANN, supra note 139, at 15; LEAF, 118 F.3d at 1471.

152. LEAF, 118 F.3d at 1471.

153. Id.

154. Id. at 1474–75; see also TIEMANN & VANN, supra note 139, at 15–16.
court determined that “hydraulic fracturing obviously falls within this definition, as it involves the subsurface emplacement of fluids by forcing them into cracks in the ground through a well.” The court found EPA’s “principal function” argument to be unpersuasive, noting the “plain meaning of the definition” and the lack of any authority in the statute to suggest that EPA should be allowed to exclude an activity on the basis that the well is used for another activity as well.

Additionally, although the court believed that the plain meaning of the statute was enough to decide the case, it briefly entertained EPA’s arguments regarding the legislative history of SDWA, noting that “far from evidencing a legislative intent contrary to the plain meaning of the statute, the legislative history supports it” and that “Congress intended to cast a wide regulatory net in enacting the UIC program.”

On this basis, the court found EPA’s grounds for denying LEAF’s petition to be invalid and remanded the petition to EPA. While EPA reinitiated its review of Alabama’s UIC program in compliance with this order, it also began to work on a report “to evaluate the environmental risks to underground sources of drinking water from hydraulic fracturing practices associated with CBM production.” Perhaps unsurprisingly for an agency that sought to avoid SDWA regulation of fracking for decades, the report concluded that fracking “poses little or no threat” to underground sources of drinking water and that no further study was required. The one area of concern EPA identified was that “[t]he use of diesel fuel in fracturing fluids poses the greatest potential threat to USDWs because the BTEX constituents in diesel fuel exceed the [federal drinking water maximum contaminant level] at the point-of-injection.”

Much like the RCRA Report to Congress and Regulatory Determination discussed infra, a number of gaps and contradictions existed in EPA’s CBM report. First, EPA found that “very little documented research had been done on the environmental impacts of injecting fracturing fluids,” an admission that not only points to a data gap in the report, but

155.  Id. at 1474–75.
156.  Id. at 1475.
157.  Id.
158.  Id. at 1478.
159.  TIEMANN & VANN, supra note 139, at 19.
160.  Id. at 19; Brady & Crannell, supra note 48, at 44 (quoting U.S. ENVTL. PROT. AGENCY, EVALUATION OF IMPACTS TO UNDERGROUND SOURCES OF DRINKING WATER BY HYDRAULIC FRACTURING OF COALBED METHANE RESERVOIRS: EXECUTIVE SUMMARY 1 (2004) [hereinafter EPA, CBM Report]).
161.  See TIEMANN & VANN, supra note 139, at 19 (quoting EPA, CBM REPORT, supra note 160, at 4–19).
162.  See infra Part VI. A.
also seems at odds with the conclusion that no further study is necessary. Second, EPA limited the focus of its report just to fracking of CBM formations and “did not review the use of hydraulic fracturing in other geologic formations, such as the Marcellus Shale or other tight oil and gas formations.” In part because of these gaps and contradictions, the report received a large amount of criticism from “internal staff, federal legislators, and respected peers,” including claims that the report was unsupportable and scientifically unsound. In particular, one EPA scientist wrote a letter to Congress and the EPA Inspector General, noting that “EPA has conducted limited research reaching the unsupported conclusion that this industry practice needs no further study at this time.”

Roughly a year later, Congress largely “codified [the report’s] finding” when it amended SDWA as part of the Energy Policy Act of 2005. The amendment modified the definition of “underground injection” to add the following exclusions:

(B) excludes—
(i) the underground injection of natural gas for purposes of storage; and
(ii) the underground injection of fluids or propping agents (other than diesel fuels) pursuant to hydraulic fracturing operations related to oil, gas, or geothermal production activities.

This exemption has come to be known as the “Halliburton Loophole,” after Vice President Dick Cheney’s former position as CEO of the oil and gas services company Halliburton, which pioneered fracking and continues to be a major manufacturer of fracking fluids, as well as the purported role that Cheney’s Energy Task Force played in the exemption.
With the exemption in place, it was now clear that EPA lacked authority under SDWA to require UIC permits for fracking operations. At the same time, it was also clear that EPA could require such permits of operations that fracked with diesel fuels. Yet it was not until February 2014, nine years after the passage of the Energy Policy Act, that EPA finally issued guidance on what compounds actually constituted “diesel fuels” and how state agencies should permit these operations.\(^{170}\)

Even though it was now responsible for just a small piece of its SDWA authority over fracking, EPA still took nearly a decade to issue the guidance that state agencies needed to permit and regulate the types of operations that EPA saw as such a “potential threat” in 2004. In fact, there was a stretch of years during which “EPA took no official position regarding the regulation of hydraulic fracturing using diesel fuel under the SDWA.”\(^{171}\) As of December 2014, neither EPA nor state agencies with delegated authority have issued any permits to operations that frack with diesel fuel.\(^{172}\)

**B. Ways Forward: How EPA Can Work Within and Around the Halliburton Loophole’s Fracking Exemption**

As the SDWA exemption is a congressionally enacted exemption that leaves no authority for EPA to “undo” it in any way—unlike the TRI or, to some extent, RCRA—it will remain in place unless a future Congress chooses to lift it. Over the years, there have been several attempts to pass such a bill—most recently via an amendment introduced by Senator Kirsten Gillibrand to the Senate’s Keystone XL pipeline bill in January 2015—but these bills have not yet made much headway.\(^{173}\) That said, EPA still has SDWA authority over the oil and gas industry in two major ways.

---


171. TIEMANN & VANN, supra note 139, at 21.


1. EPA and the States Must Regulate Fracking with Diesel Fuels

First, under the Energy Policy Act’s diesel exception, EPA and the delegated state agencies still have authority to regulate and permit fracking operations that use diesel fuels. In fact, given this clear authority, any state that fails to permit such operations and prohibit unpermitted operations is in violation of the minimum requirements for delegated programs, as discussed supra in the context of the LEAF case. As of December 2014, however, neither EPA nor the state agencies have used this authority to issue a single permit to such operations.

This would not be a problem if fracking operations no longer used diesel, as industry representatives have repeatedly asserted for years. However, based on a recent review of the industry’s own disclosure reports, there are still hundreds of wells that have used diesel fuel as part of their fracking fluids in the last four years. In August 2014, the Environmental Integrity Project published a report in which it reviewed thousands of self-reported disclosures by oil and gas operators to FracFocus, the industry’s preferred disclosure mechanism and database. The organization compared these disclosures against the five chemicals that EPA had identified as constituting “diesel fuel” in its February 2014 guidance and found that 351 wells in 12 states used at least one of these products between 2010 and mid-2014.

The organization then contacted each of the state agencies responsible for UIC permitting in those states, as well as Region 3 of EPA, which retains primacy for UIC permitting in Pennsylvania, and found that “no permit applications had been received and no permits had been issued for any of the [351] wells.” In a follow-up investigation several months later, the Environmental Integrity Project further investigated the FracFocus reports, looking specifically for fracking products known to contain one of the five diesel fuel chemicals and finding an additional 243 wells fracked with these products between 2011 and August 2014.

175. 42 U.S.C. § 300h(b)(1)(A); see also supra note 66 and accompanying text.
176. See supra note 87 and accompanying text.
177. GREENE, supra note 172, at 6.
178. Id. at 8–9.
179. Id.
180. Id. at 19, n.1.
This is clearly a problem of EPA’s own making. After the enactment of the Halliburton Loophole and the diesel exception, EPA finally had the clarity—and the limited authority—that it desired. Yet rather than acting quickly to promulgate the necessary regulations or guidance to ensure that state authorities could implement and enforce this authority, EPA waited and “took no official position” for years.\(^\text{182}\) During this time, the agency failed even to use its own implementation and enforcement authority in states in which it retained primacy, such as Pennsylvania.\(^\text{183}\)

In 2010, EPA admitted that fracking with diesel was subject to the permitting requirements for Class II UIC wells, but did not propose to revise the minimum requirements for state UIC programs at that time or to issue any guidance in the interim.\(^\text{184}\) In 2012, EPA chose to issue draft guidance rather than full regulations, and followed with the final version of this guidance in February 2014.\(^\text{185}\) In fact, the final guidance narrowed the proposed guidance’s coverage: from six chemicals—as well as their “associated common synonyms”—to just five chemicals, identified only by their Chemical Abstracts Services Registry Numbers.\(^\text{186}\) The distinction is important, since what actually constitutes “diesel fuel” is a surprisingly broad category of substances, with a variety of different product names and synonyms.\(^\text{187}\)

To improve this situation, in which hundreds of wells use diesel fuels and still do not have UIC permits, EPA simply needs to act. As a permitting authority in states where it retains primacy, EPA can finally start to issue UIC permits to wells that continue to frack with diesel. In states with delegated authority, EPA must use its oversight power to ensure that those states are issuing UIC permits to wells that require them. If those states choose not to issue such permits, they are not meeting the minimum requirements of a delegated UIC program, and must revoke their authority.\(^\text{188}\)

Finally, EPA should revise its UIC and state program regulations.\(^\text{189}\) The guidance is a good step in the right direction, but EPA should formally revise the regulations to clarify what is required for the permitting and regulation of wells fracked with diesel and to ensure that all state programs must comply with these requirements.

---

182. TIEMANN & VANN, supra note 139, at 21.
183.  See supra note 95 and accompanying text.
184.  TIEMANN & VANN, supra note 139, at 21.
185.  Id.; GREENE, supra note 172, at 6–7.
186.  GREENE, supra note 172, at 6–7.
187.  Id.; EPA PERMITTING GUIDANCE, supra note 170, at 9–11.
188.  42 U.S.C. § 300h(b)(1)(A); see also supra note 66 and accompanying text.
2. EPA Must Improve its Regulation of Wastewater Injection Wells

Another area in which EPA can still act in the aftermath of the Halliburton Loophole is in its regulation and oversight of the UIC program for Class II injection wells. Class II wells are defined by the fact that they accept injection of oil and gas wastewater: i.e., the “flowback” and “produced water” that returns to the surface during drilling and fracking operations. Class II wells accept this wastewater for two primary purposes: “enhanced recovery” of oil and gas through the injection of wastewater and permanent disposal of wastewater. Although fracking is a type of enhanced recovery, the Halliburton Loophole only exempted “hydraulic fracturing operations related to oil, gas, or geothermal production activities” from the UIC program. EPA continues to have its full authority over Class II wells used for disposal and enhanced recovery, so long as fracking for oil and gas production is not involved.

The reason these Class II wells are important is because of the large and increasing role they play in accepting wastewater from fracking operations. Each day, the nation’s 172,000 Class II wells accept at least two billion gallons of oil and gas production wastewater. This wastewater contains the full range of fracking fluids discussed supra, as well as chemicals from the oil and gas formations, such as chlorides, lead, arsenic, and naturally occurring radioactive materials. These wells have proliferated in just the last decade, as oil and gas operators have sought out new ways to dispose of the millions of gallons of wastewater associated with fracking. One unexpected result of this increased use of Class II wells has been the number of earthquakes caused by the wells’ “induced seismicity.”

The Class II program and the problems it seeks to address are not new, however. For example, in EPA’s 1988 Regulatory Determination under RCRA, discussed infra, the agency specifically relied on the capabilities of the UIC program as a reason that increased regulation of oil and gas wastes

---

191. Id.
193. Id.
194. GAO, UNDERGROUND INJECTION, supra note 36, at 1, 3.
195. Id. at 1; BISHOP, supra note 27, at 9–11.
197. Id.; GAO, UNDERGROUND INJECTION, supra note 36, at 35.
under RCRA was not necessary.\textsuperscript{198} At the same time, EPA recognized that improvements to the UIC program were necessary to address certain gaps that the agency had identified.\textsuperscript{199}

In June 2014, the GAO published a report in which it reviewed EPA’s oversight of the Class II program.\textsuperscript{200} The GAO found two specific deficiencies, on which it urged EPA to take action. First, the GAO found that EPA was not consistently conducting annual on-site reviews of state programs, as is required by EPA’s own guidance.\textsuperscript{201} Such reviews are important, given the key role that state agencies with delegated authority play in implementing and enforcing the Class II UIC program. At present, 39 states have delegated authority to administer their own Class II UIC programs.\textsuperscript{202} EPA responded that it did not have the funding to conduct such annual reviews as required by the guidance. In turn, the GAO urged EPA to revise its guidance. Given that the guidance was last revised in 1983, a new revision could modernize such evaluations and make them more efficient, while also “identify[ing] priority activities that are needed to oversee programs and ensure their effectiveness.”\textsuperscript{203} At the very least, such a modern revision would ensure “that state class II programs are being managed effectively and . . . achieving their purpose of protecting underground sources of drinking water.”\textsuperscript{204}

Second, the GAO found that EPA was also not keeping its regulations up to date to incorporate state program requirements.\textsuperscript{205} While EPA largely relies on the states to conduct their own enforcement, there are instances in which EPA must step in, either of its own initiative or at a state’s request. In those cases, EPA is only able to enforce those state requirements that it has incorporated into its own regulations.\textsuperscript{206} In certain cases, EPA “never incorporated any state program requirements into federal regulations.”\textsuperscript{207} EPA’s rejoinder was that the incorporation process is “burdensome and time-consuming,” but the GAO pointed out that the incorporation requirement is one that EPA imposed on itself. If it so desired, EPA could

\begin{itemize}
  \item \textsuperscript{198} Regulatory Determination for Oil and Gas and Geothermal Exploration, Development and Production Wastes, 53 Fed. Reg. 25,446, 25,447 (July 6, 1988) [hereinafter Development and Production Wastes].
  \item \textsuperscript{199} Id.
  \item \textsuperscript{200} GAO, UNDERGROUND INJECTION, supra note 36, at 1.
  \item \textsuperscript{201} Id. at 39.
  \item \textsuperscript{202} Id. at 15.
  \item \textsuperscript{203} Id. at 40–41.
  \item \textsuperscript{204} Id. at 41.
  \item \textsuperscript{205} Id.
  \item \textsuperscript{206} GAO, UNDERGROUND INJECTION, supra note 36, at 41, 43.
  \item \textsuperscript{207} Id. at 42.
\end{itemize}
revise its regulations to make this process much easier and streamlined. 208 According to EPA officials, however, the agency “has not evaluated alternatives to its current approval process.” 209

These are two actions by which EPA could greatly improve its Class II UIC program and ensure that the two billion gallons of oil and gas wastewater injected every day are handled safely and effectively and do not endanger sources of drinking water. EPA needs no congressional authorization to conduct these actions; of its own accord, it could issue the revised guidance document rapidly and the revised regulations within a year or two. For better or worse, the discretion lies wholly with EPA.

Of the three exemptions discussed in this article, the Halliburton Loophole is the most “classic” exemption: Congress clearly took away most of EPA’s UIC authority over fracking and left it with no regulatory mechanism to undo the exemption. It is easy to frame Congress as the bully here, acting at the behest of Vice President Cheney’s oil and gas interests and unilaterally taking away EPA’s ability to protect the public from fracking. But it is not that simple.

First, EPA laid the groundwork for the Halliburton Loophole. Over 30 years, the agency avoided acting on its authority, legally interpreted SDWA in a way to show that it should not have this authority, and then published a scientifically unsound report to demonstrate why it did not need this authority. Even after Congress cut this authority down to a manageable piece, EPA still would not act for another ten years.

Second, the enactment of the Halliburton Loophole is not the end of the story. While it would be most ideal for the protection of the public if Congress later chooses to close the loophole, there is still much that can be done within the limited authority left by the Loophole. EPA and the delegated states can finally issue permits for fracking operations that use diesel and prohibit any such operations without permits. EPA can also act in the areas that the Halliburton Loophole left untouched, improving the Class II UIC program to better regulate the billions of gallons of fracking wastewater injected underground every day across the nation.

V. THE RESOURCE CONSERVATION AND RECOVERY ACT

The final exemption considered in this article is the exemption of wastes associated with oil and natural gas exploration and production (“E&P”) from regulation under the hazardous waste provisions of RCRA.

208. Id. at 44–45.
209. Id. at 45.
This exemption falls somewhere between the very traditional exemption of the Halliburton Loophole and the more liberal TRI exemption. Because of its place as a “middle-ground” exemption, the exemption under RCRA is a complicated one.

The exemption is a statutory one, enacted by Congress in order to constrain EPA’s authority over E&P wastes. However, Congress also left EPA with a mechanism to undo the exemption, as well as authority to regulate E&P wastes under RCRA’s non-hazardous provisions. In spite of the exemption’s complicated nature, the two themes remain at play: (1) the exemption’s force is sustained in large part by decades of EPA inaction, and (2) as a consequence of this, there is still much that can be done to improve regulation of E&P wastes.

A. How We Got Here: The Bentsen Amendment and EPA’s Regulatory Determination

The complicated story of the E&P waste exemption begins in 1976, when Congress amended the Solid Waste Disposal Act of 1965 to enact RCRA.\(^{210}\) RCRA most notably differed from the prior Solid Waste Disposal Act in its addition of the hazardous waste provisions under Subtitle C, which provided for what has become known as “cradle-to-grave” management of hazardous wastes.\(^{211}\) To this end, Congress mandated that, within 18 months of RCRA’s enactment, EPA would “promulgate regulations identifying the characteristics of hazardous waste, and listing particular hazardous wastes” that would be subject to the provisions of Subtitle C.\(^{212}\)

EPA responded to this mandate in 1978, proposing regulations not only for identifying and managing hazardous wastes, but also identifying a set of “special wastes” for which EPA would defer regulation under the hazardous waste provisions until it had conducted additional studies.\(^{213}\) These “special wastes” fell into six main categories:

1. Cement kiln dust;
2. Utility waste (e.g., coal ash);

---


\(^{211}\) LUTHER, supra note 210, at 3.


3. Phosphate mining waste;
4. Uranium mining waste;
5. Other mining waste; and
6. Oil and gas drilling muds and oil production brines. 214

EPA’s primary reasoning was that these wastes occurred in particularly large volumes, the hazards were relatively low, and the wastes were not particularly amenable to control techniques for traditional facilities. 215 Somewhat contradictorily, EPA also stated that it had “very little information on the composition, characteristics, and the degree of hazard posed by these wastes.” 216

In other words, even before the E&P waste exemption existed—indeed, while EPA was under a clear-cut mandate to identify and regulate all hazardous wastes—EPA was proposing ways in which it could avoid regulating E&P wastes under Subtitle C. As discussed supra, the lead-up to the Halliburton Loophole involved a very similar interplay between EPA and Congress. 217 In 1980, EPA finalized the rule and promulgated the E&P exemption regulation that still stands today. 218

It is worthwhile to note briefly the differences between the Subtitle C provisions, which apply only to wastes that are identified as hazardous, and the Subtitle D provisions, which apply to all other “solid wastes.” Subtitle C contains stringent “cradle-to-grave” standards, which “regulate hazardous waste from its initial point of generation to its ultimate point of disposal (and beyond, if disposal leads to contamination of air, soil, or water).” 219 These standards apply to generators of hazardous waste, transporters, and facilities that treat, store, and dispose of hazardous waste (known as “TSDFs”). 220 EPA has primary authority to implement and enforce the Subtitle C program, but states may obtain authority to implement and enforce the program, with EPA’s approval. 221

Solid waste that is not identified as hazardous waste—including those wastes that are “explicitly deemed not a hazardous waste,” such as the “special wastes”—is regulated under Subtitle D rather than Subtitle C. 222
While Subtitle C includes standards from cradle to grave, including transportation, treatment, and storage, Subtitle D primarily covers the disposal of solid waste. Furthermore, while EPA has primary authority over the Subtitle C program, “EPA’s authority to regulate solid waste under Subtitle D is limited.” EPA promulgates the Subtitle D regulations, including the standards distinguishing between permitted sanitary landfill facilities and prohibited “open dumping” of solid waste, but it is up to the individual states to implement and enforce these standards.

Because EPA cannot directly enforce the standards, and in fact cannot force states to adopt the standards, the Subtitle D regulations are written to be “self-implementing”: that is, in a detailed enough manner that an operator of a disposal facility can read and comply with them. In other words, the Subtitle D program is a much looser and less stringent program than the strict, “cradle-to-grave,” and federally enforceable Subtitle C program.

Several months after EPA finalized its special wastes deferral in 1980, Congress enacted the Solid Waste Disposal Act Amendments, which followed on EPA’s lead to amend RCRA with respect to these “special wastes.” Congress’ decision to revisit RCRA was apparently driven by opinions both for and against EPA’s deferral of the special wastes. On the one hand, regulation of special wastes under Subtitle C could lead to high costs to industry, “given uncertainties of risks associated with such wastes,” as well as “conflicts with other federal law.” On the other hand, there were also concerns over the “precedent that would be set by giving preferential treatment to certain industries to be exempt from strict Subtitle C requirements.”

The result of the debate was that Congress opted to enact EPA’s special waste deferrals as statutory exemptions, at least temporarily. With respect to E&P wastes, the relevant provision is what has been called the “Bentsen Amendment,” after its sponsor Senator Lloyd Bentsen, which exempted “drilling fluids, produced waters, and other wastes associated with the exploration, development, or production of crude oil or natural gas or geothermal energy” from regulation under Subtitle C for at least two years.

223. Id.
224. Id.
225. LUTHER, supra note 210, at 8.
226. Id. at 9.
228. LUTHER, supra note 210, at 4.
229. Id.
In conjunction with this exemption, Congress required EPA to take three main actions. First, EPA would conduct a study on E&P wastes and transmit the resulting report to Congress two years after the enactment of the exemption—by October 1982. The study would consider the effects of E&P wastes on human health and the environment; “the adequacy of means and measures currently employed by” the oil and gas industry and government “to prevent or substantially mitigate such adverse effects”; and the alternatives to such measures, along with their costs.\footnote{42 U.S.C. §§ 6921(b)(2)(B), 6982(m)(1)–(2).}

Second, based on this study, EPA would determine either to regulate E&P wastes under Subtitle C’s hazardous waste provisions or determine “that such regulations are unwarranted.”\footnote{42 U.S.C. § 6921(b)(2)(B).}

Third, EPA would transmit this determination, along with any necessary Subtitle C regulations, to Congress. The regulations would “take effect only when authorized by Act of Congress.”\footnote{42 U.S.C. § 6921(b)(2)(C).}

Following Congress’ enactment of the exemption, and in spite of the statutory deadline of October 1982, EPA did not actually complete and transmit the required Report to Congress until December 1987.\footnote{Development and Production Wastes, supra note 198, at 25,447–48; James R. Cox, Revisiting RCRA’s Oilfield Waste Exemption as to Certain Hazardous Oilfield Exploration and Production Wastes, 14 VILL. ENVTL. L.J. 1, 4 (2003).} In fact, EPA only complied with this belated deadline after a nonprofit organization sued EPA for its violation of the deadline and entered into a consent decree with the agency.\footnote{Development and Production Wastes, supra note 198, at 25,447.}

EPA followed on the report with its Regulatory Determination in July 1988, in which it determined that E&P wastes did not require regulation under Subtitle C of RCRA.\footnote{Id. at 25,447–48.} The Determination itself is an interesting document. First, while the Determination considers in detail “three key factors” relating to the oil and gas industry, the ultimate decision is based on six “reasons” that only partially overlap with these factors.\footnote{Id. at 25,447, 25,454–56.} Most notably, the reasons do not include anything to do with the hazardous characteristics of E&P wastes. Second, EPA’s actual analysis of the hazardous characteristics of E&P waste, within the major factors, is rife with contradictions, data gaps, and failures to assess certain waste streams. Above all, one comes away from the Determination with the sense that EPA approached the issue with great reluctance to regulate E&P wastes under Subtitle C.
First, looking at the “reasons” versus the “factors,” the three key factors EPA considered were the hazard assessment of E&P wastes, an economic impact analysis of Subtitle C regulations on the oil and gas industry, and the adequacy of existing federal and state laws and regulations. EPA drew these factors from the Bentsen Amendment’s required areas for coverage in the Report to Congress.

By contrast, EPA’s six stated reasons for deciding not to regulate E&P wastes under Subtitle C were that (1) Subtitle C is not flexible enough to consider costs and avoid serious economic impacts to the industry; (2) Existing state and federal regulatory programs are “generally adequate” in controlling E&P wastes; (3) Subtitle C permitting would “hinder new facilities” and “disrupt[] the search for new oil and gas deposits;” (4) Subtitle C regulation would strain the capacity of existing Subtitle C facilities; (5) Subtitle C regulation would duplicate state authorities; and (6) Subtitle C regulation would impose a “permitting burden” on regulatory agencies.

What is most apparent from these reasons is that they overlap with only two of the “key factors”—the economic impact analysis and the adequacy of existing laws and regulations—but not the hazard assessment. EPA does not state in the reasons, for example, that E&P wastes are not hazardous enough to warrant regulation under Subtitle C. It partially makes this case within its analysis of the factors, as discussed infra, but chooses to omit this when it gets to its actual reasoning. In a certain way, these reasons are more of a policy argument against the entire Subtitle C framework than its specific application to E&P wastes. In fact, with minor edits, one could quite easily use these same reasons to exclude nearly any waste stream from regulation under Subtitle C.

Second, EPA’s analysis of the key factors—and in particular the “hazard assessment” of E&P wastes—contains a number of gaps and contradictions that undermine the conclusions EPA reached. The problem is best encapsulated in what one commentator has called “the most overt contradiction” in the Regulatory Determination. That is, although EPA found the risks of E&P wastes to be “relatively low,” this conclusion is contradicted by other findings of risk elsewhere in the Determination as

238. Id. at 25,446.
239. 42 U.S.C. § 6982(m).
241. See supra note 158 and accompanying text.
242. There are parallels with EPA’s 1996 decision not to add the oil and gas extraction industry to the TRI. In that instance, while EPA found that the industry certainly used and released large amounts of TRI-listed toxic chemicals, it similarly opted not to include the industry on the basis of other factors not related to this toxic nature. See supra Part II. A.
well as EPA’s own admission that the study it relies on does not cover the predominance of the risks.\footnote{243}{Cox, supra note 234, at 19 (quoting 53 Fed. Reg. at 25,448–49).}

More specifically, EPA’s analysis did not consider landspreading, roadspreading, disposal of associated wastes, or “storage of produced water in unlined pits”—all of which are major sources of risk and are directly relevant to whether E&P wastes should be managed “cradle to grave” or under the less-stringent standards of Subtitle D.\footnote{244}{Id. at 20, 30 (quoting 53 Fed. Reg. at 25,454).} EPA itself conceded that these practices and waste streams “may pose higher risks” and “contain constituents that are similar in chemical composition and/or toxicity to other wastes currently regulated under RCRA Subtitle C.”\footnote{245}{Id. at 20 (quoting 53 Fed. Reg. at 25,454), 19 (quoting 53 Fed. Reg. at 25,455).} From these studies, EPA could only “roughly estimate” how much E&P waste would be considered hazardous: “approximately 10 to 70 percent of large-volume wastes and 40 to 60 percent of associated wastes could potentially exhibit RCRA hazardous waste characteristics.”\footnote{246}{Development and Production Wastes, supra note 198, at 25,455.} As Professor Cox stated, “[i]t is difficult to envision why a federal agency whose mission is to protect human health and the environment on the basis of scientific principles would attempt to draw any conclusions from data containing a range of uncertainty of 60%.”\footnote{247}{Cox, supra note 234, at 21.}

Similarly, there were “vast uncertainties and statistical inaccuracies in the studies” that EPA relied upon.\footnote{248}{Id. at 21.} At the same time, EPA freely admitted that “[m]ost State regulations do not include specific controls for the management of [associated] wastes,” certain states had relaxed controls for “land application of large-volume wastes,” and damage cases had occurred even under “currently applicable State and Federal requirements.”\footnote{249}{Development and Production Wastes, supra note 198, at 25,446, 25,455.} Still, EPA found these programs to be adequate in their regulation and enforcement over E&P wastes. As Cox stated, “it is difficult to comprehend how EPA . . . can conclude that [s]tate . . . regulations are generally adequate to control

2015] EPA’s Role in Implementing and Maintaining the Oil and Gas 625

244. Id. at 20, 30 (quoting 53 Fed. Reg. at 25,454).
245. Id. at 20 (quoting 53 Fed. Reg. at 25,454), 19 (quoting 53 Fed. Reg. at 25,455). The Congressional Research Service similarly has noted that EPA considered “[n]either the volume nor the nature of wastewater produced during shale gas extraction,” though this is more due to the industry practices that have arisen since the 1988 Determination, rather than a contemporaneous weakness in the analysis. Luther, supra note 210, at 6.
246. Id. at 21.
250. Id. at 25,444–55; Cox, supra note 234, at 23 (quoting 53 Fed. Reg. at 25,446).
the management of oil and gas wastes.\textsuperscript{251} In spite of these contradictions, gaps in the practices and wastes studied, and data quality issues—even by EPA’s own admission—the agency saw fit to exempt a vast category of wastes from Subtitle C’s cradle-to-grave controls.

One could conclude from this disjunctive mix of factors, reasons, and contradictions that EPA’s decision was somehow influenced or that other forces were at play. Contemporaneous accounts support this conclusion.\textsuperscript{252} According to two EPA staff members, EPA leadership “relied on ‘solely political reasons’ to reject a staff recommendation that some oil and gas drilling wastes be more strictly regulated.”\textsuperscript{253} While the majority of an EPA staff working group apparently had recommended that a small category of E&P wastes be regulated as hazardous, “EPA Administrator Lee Thomas and J. Winston Porter, EPA’s assistant administrator for solid waste and emergency response, . . . had decided that all oil and gas drilling wastes would remain exempt from hazardous waste rules,” given that “removing any portion of the exemption would be too disruptive and burdensome to both the regulated industry and the regulating agencies.”\textsuperscript{254}

The effect was that E&P wastes would remain exempt from regulation under Subtitle C, thereby leaving the previously promulgated regulatory exemption in place.\textsuperscript{255} However, as a necessary component of this Determination, EPA stated that it would implement a “three-pronged approach toward filling the gaps in existing State and Federal programs that regulate the management of wastes from the crude oil, and natural gas, industries.”\textsuperscript{256} This approach would include working with the states to improve the strength and uniformity of their programs; working with Congress to secure any additional statutory authority; and, most importantly, improving federal authorities under the Clean Water Act, SDWA, and RCRA’s Subtitle D regulations.\textsuperscript{257} As to this last element, EPA laid out an extensive plan for how it would develop “tailored” Subtitle D standards that would “augment” the program and “focus on gaps in existing State and Federal regulations.”\textsuperscript{258}

---

\textsuperscript{251} Cox, supra note 234, at 23 (quoting 53 Fed. Reg. at 25,446).


\textsuperscript{253} Id.

\textsuperscript{254} Id.

\textsuperscript{255} 40 C.F.R. § 261.4(b)(5).

\textsuperscript{256} Development and Production Wastes, supra note 198, at 25,456.

\textsuperscript{257} Id.

\textsuperscript{258} Id. at 24,457–58.
Nearly three decades later, these tailored regulations still do not exist, nor is there any evidence that EPA took any action on them whatsoever. That is, EPA’s announcement of this bold initiative appears to be its last word on it as well. No efforts to seek comments, collect data, or propose changes to the criteria at 40 C.F.R. Part 257 are apparent in the Federal Register or elsewhere. In fact, the only other time in which EPA formally addressed E&P wastes under RCRA again, it merely “clarified” the scope of oil and gas wastes exempted from Subtitle C, but did not discuss or even mention the status of efforts to tailor the Subtitle D regulations.259 Other than this clarification, EPA has taken no official action on E&P wastes for 27 years.

B. Ways Forward: How EPA Can Work Within and Around the Bentsen Amendment

From this historical background, one can see that EPA has played a central role both in implementing and maintaining the Subtitle C exemption. While it is true that Congress enacted the Bentsen Amendment in 1980, EPA laid much of the groundwork leading up to that point and has since then done very little to improve the situation. Indeed, even after stating that the generic Subtitle D regulations are inadequate to handle the specific issues of E&P wastes and needed tailoring by EPA, the agency has taken no public action to make good on this promise.

With this history in mind, we turn to the second premise of this article: there is still much that EPA can do to improve the regulation of E&P wastes under RCRA. Unlike certain exemptions, EPA has a relatively large amount of unused power under the restrictions of the Bentsen Amendment.

1. EPA Must Promulgate the Necessary “Tailored” Regulations under Subtitle D

First, EPA could finally act on its stated intent to promulgate tailored regulations for E&P wastes under Subtitle D. As EPA stated in the Regulatory Determination, the “existing Federal standards under Subtitle D of RCRA provide general environmental performance standards . . . but these standards do not fully address the specific concerns posed by oil and gas wastes.”260

---


To rectify this issue, EPA envisioned tailored Subtitle D regulations that would focus primarily on “gaps in existing State and Federal regulations.” EPA flagged certain examples of these gaps, including the broad category of “associated wastes” and the management practices and facilities used for “large-volume wastes” (e.g., wastewater), such as roadsprading, landsprading, and impoundments. A particular area of concern for EPA were centralized and commercial facilities that treat, store, and dispose of E&P wastes in concentrated form—and especially the pits and impoundments at these facilities. Although the oil and gas industry has changed greatly between 1988 and the present, all of these facilities and practices continue to remain issues for surrounding individuals, communities, and the environment.

If EPA wished to promulgate these tailored regulations, it could begin immediately. There is nothing in the Bentsen Amendment constraining EPA’s ability to regulate E&P wastes under Subtitle D. In fact, the opposite is true: EPA has an ongoing duty to review and, if necessary, revise the regulations. Under the requirements of section 2002(b) of RCRA, each regulation “shall be reviewed and, where necessary, revised not less frequently than every three years.” Given EPA’s determination in 1988 that revisions to the Subtitle D regulations were necessary and its stated intention to undertake these revisions, the agency was required to have completed these necessary revisions by July 6, 1991 at the latest.

Even if EPA had not determined revisions to the Subtitle D regulations to be necessary, it would still be in violation of the requirements of section 2002(b), as it has failed to review the Subtitle D regulations for oil and gas wastes for almost nine successive three-year deadlines. As one court has stated with respect to EPA’s dereliction of another statute’s similar “ongoing, periodic review and revision” requirements, “EPA has not merely missed a deadline, it has nullified the congressional scheme for a fixed interval review and revision process.”

2. Regulation under Subtitle C: More Complicated, but Still Possible

Another option is for EPA to revisit the Subtitle C exemption and determine that E&P wastes should be regulated under Subtitle C. This is the

261. \textit{Id.} at 25,457.
262. \textit{Id.}
263. \textit{Id.}
264. \textit{See supra} Part II. B.
266. \textit{Id.}; \textit{Development and Production Wastes, supra} note 198, at 25,457.
“most obvious means” for EPA to achieve clear-cut regulation of E&P wastes under RCRA, as well as the preferred mechanism from the perspective of greatest environmental protection.\footnote{268} That being said, there are also more complexities involved with revisiting the Subtitle C exemption, given the Bentsen Amendment’s provision that Subtitle C “regulations shall take effect only when authorized by Act of Congress.”\footnote{269} Although this provision is connected to the time-specific Report to Congress and Regulatory Determination provisions, some have interpreted this as imposing an ongoing requirement that any Subtitle C regulations at any point in the future require the consent of Congress.\footnote{270}

For this reason, achieving regulation of E&P wastes under Subtitle C may be “the most difficult [option] to achieve politically.”\footnote{271} With that in mind, there are several initiatives and options to achieve Subtitle C regulation of E&P wastes.

First, in 2010, the Natural Resources Defense Council (“NRDC”) submitted a rulemaking petition to EPA requesting that the agency initiate proceedings to revisit the Subtitle C exemption and to promulgate necessary regulations.\footnote{272} In the petition, NRDC noted that “EPA never intended the Regulatory Determination to be its final word on E&P waste”; that EPA had failed to implement the Determination’s promised “three-pronged plan,” which included the never-realized tailored Subtitle D regulations; and the growing regulatory gaps in the decades since the Determination.\footnote{273} NRDC’s petition included, in particular, the toxicity of various E&P wastes, including fracking fluids, wastewater, drill cuttings, and associated wastes;\footnote{274} a survey of the gaps and weaknesses in existing state regulatory mechanisms;\footnote{275} and an analysis demonstrating that E&P wastes meet RCRA’s criteria for “hazardous waste.”\footnote{276} Over four years later, EPA has failed to issue a formal response to the petition.

Second, there are numerous wastes associated with the oil and gas industry that fall outside the Bentsen Amendment and can be regulated according to RCRA’s Subtitle C framework.

\footnote{268. Cox, supra note 234, at 28.}
\footnote{269. 42 U.S.C. § 6921(b)(2)(C).}
\footnote{270. Cox, supra note 210, at 7.}
\footnote{271. Cox, supra note 234, at 28.}
\footnote{273. Id. at 6.}
\footnote{274. Id. at 7–12.}
\footnote{275. Id. at 17–30.}
\footnote{276. Id. at 37–41.}
under Subtitle C. As EPA clarified in 1993, for a waste to be exempt from
regulation under Subtitle C, “it must be associated with operations to locate
or remove oil or gas from the ground or to remove impurities from such
substances and it must be intrinsic to and uniquely associated with oil and
gas exploration, development or production operations.”

Since that time, EPA has expanded on the types of wastes that are not
“intrinsic to” and “uniquely associated with” exploration and production.
For example, “lubricants and solvents” produced at other industrial
facilities are not exempt, nor are used synthetic pit liners, as many other
types of operations use such liners as well. These are both significant
clarifications, given that solvents and lubricants often have hazardous
characteristics, and the disposal of used pit liners on site—contaminated
with whatever E&P solid and liquid wastes occupied the pits—is
historically a common industry practice.

Perhaps even more significantly, EPA has clarified that the exemption
does not apply to “unused products that are leaked and spilled, such as
unused drilling mud or fracturing fluid spilled on the ground.” Indeed,
“exempt wastes may be regulated if they are mixed with non-exempt
wastes. For example, storage of produced/flowback waters would generally
be regulated if commingled with a listed hazardous waste.” This is a very
large area outside the exemption, as there are many incidents involving
spilling of fracturing fluids, drilling muds, and other products prior to their
use. Similarly, if fracking wastewater, which is often stored and reused in
future fracking operations, is mixed with unused fracturing fluids, lubricants,

---

277. 1993 Clarification, supra note 259, at 15,284.
(Mar. 8, 2011) [hereinafter Cardin Letter]; Letter to Michael S. Freeman, Earthjustice, from Robert
279. See, e.g., BISHOP, supra note 27, at 8–9 (discussing uses and toxicity of heavy
naptha); Letter from Michael Freeman, Earthjustice, to Maria P. Vickers, U.S. Envtl. Prot. Agency 1
(Apr. 27, 2010), at http://yosemite.epa.gov/osw/rcra.nsf/6f3756c16d517d185256f2a007818ec/5E05F52F27A7DE6085257
7BC06C78A?File=14816.pdf [http://perma.cc/639P-HR59] (last visited Apr. 2, 2015); David Ludlam,
COGCC Pit Liner Burial Rule Supported by COGA, COLO. OIL & GAS ASS’N (Feb. 21, 2015, 2:44 PM)
280. Cardin Letter, supra note 278, at 5.
281. Id.
282. See, e.g., DEP Investigating 13,000+ Gallon Frack Water Spill In Lycoming County,
Estimated 13,000 Gallons Into Nearby Waterways, DESMOGBLOG.COM (Nov. 22, 2010, 6:55 PM),
http://www.desmogblog.com/exxon-fracking-fluid-spill-pennsylvania-dumps-13000-gallons-nearby-
waterways [http://perma.cc/Y9AT-TEY3].
or solvents, this entire commingled waste should fall outside the exemption until it is used.

This is significant, as it should allow the full range of Subtitle C controls for storage and handling to be applied to certain areas of oil and gas operations, such as tanks and impoundments. If EPA is willing to employ this authority, it has far greater power over oil and gas operations than it currently uses.

A third option—albeit outside of EPA’s hands—is the Closing Loopholes and Ending Arbitrary and Needless Evasion of Regulations (“CLEANER”) Act, which was introduced by Representative Matt Cartwright in the 113th Congress in 2013.283 If enacted, the Act would have removed the Bentsen Amendment, required EPA to revisit the Subtitle C exemption within one year, and required EPA to promulgate Subtitle D regulations pertaining to facilities that “receive drilling fluids, produced waters, or other wastes associated with” oil and gas exploration and production within one year.284 Although the bill “died in committee” and did not receive a vote by the U.S. House of Representatives, there is a chance that Representative Cartwright could reintroduce the CLEANER Act in the current Congress.285

C. Learning from Experience: Coal Ash and the Bevill Amendment

If EPA decides to move forward on regulating E&P wastes, one advantage it has is that it will not be starting from scratch. On December 19, 2014, EPA finalized tailored Subtitle D regulations for coal combustion waste (also known as “coal ash”).286 Although the regulatory framework and history for coal ash under RCRA is slightly different than for E&P wastes, there are enough similarities to give EPA guidance on how to proceed with promulgating tailored Subtitle D regulations for E&P


wastes—as well as the regulatory delays and pitfalls it should seek to avoid this time around.

Like E&P wastes, EPA categorized coal ash as a “special waste” in 1978 and deferred regulating it under Subtitle C. Congress followed on this deferral in 1980 by exempting coal ash under the Bevill Amendment’s counterpart, the Bentsen Amendment. The main difference between the two amendments is that the Bevill Amendment does not include the Bentsen Amendment’s requirement that any necessary Subtitle C regulations be authorized by an act of Congress.

Unlike E&P wastes, which have had a relatively simple history of the 1987 Report to Congress and the 1988 Regulatory Determination, EPA’s determinations and rulemakings for coal ash have had a number of starts and stops over the years. For coal ash, EPA submitted two Reports to Congress, in 1988 and 1999, each followed by a separate Regulatory Determination, in 1993 and 2000. Under both Regulatory Determinations, EPA decided to keep the Subtitle C exemption in place—although the 2000 Determination apparently reached this conclusion only after review and revision of the draft Determination by the White House Office of Management and Budget (“OMB”).

Like the E&P Regulatory Determination, the 2000 coal ash Regulatory Determination concluded that revision to Subtitle D regulations for coal ash landfills and impoundments would be appropriate. Also like the E&P Regulatory Determination, EPA made no immediate move to act on this conclusion. It was only after a Tennessee Valley Authority coal ash impoundment released over one billion gallons of coal ash slurry in December 2008—and subsequent public outcry—that EPA finally decided to revisit its conclusion.

288. LUTHER, supra note 210, at 4.
289. Id. at 7; 42 U.S.C. § 6921(b)(2)(C).
291. See Appalachian Voices, 989 F. Supp. 2d at 39 (indicating that the exemption remained after each determination).
In June 2010, after nearly seven months of revision by OMB, EPA released its proposed regulations.\(^{294}\) While EPA initially planned to propose regulations under Subtitle C, OMB’s revisions resulted in a unique proposed rule with “two alternative regulations”: one in which EPA would lift the exemption and regulate under Subtitle C, and one in which it would promulgate tailored regulations under Subtitle D.\(^{295}\)

Fearing additional years of delay, a coalition of environmental groups filed a lawsuit against EPA under the section 2002(b) deadline provision of RCRA, requesting the court to set a deadline for EPA’s final revision of the rules.\(^{296}\) After a ruling by the court in favor of the groups, EPA entered a consent decree with the groups in early 2014.\(^{297}\)

On December 19, 2014, over two decades from its first Regulatory Determination, 14 years since its second Regulatory Determination, and almost exactly six years since the disaster in Tennessee, EPA promulgated tailored regulations for coal ash under Subtitle D of RCRA.\(^{298}\) Members of Congress have already promised bills to block the new rule, and litigation is likely.\(^{299}\) Nonetheless, coal ash stands as the first “special waste” to have achieved tailored regulations under Subtitle D of RCRA.

There are several lessons one can take from the long history of the coal ash rulemaking. For one, EPA has the ability, both legally and pragmatically, to promulgate tailored Subtitle D regulations for special wastes. While there are political and institutional forces that will inevitably push back against such regulations, EPA ultimately can get these regulations done. Additionally, these same forces have made regulation of special wastes under Subtitle C an apparent nonstarter for the near future.

The final lesson is that EPA has a duty to make these revisions. EPA conceded as much in the lawsuit, and the court agreed, following a long line
of case law.\textsuperscript{300} Once EPA has determined that revisions are necessary, as it did for E&P wastes and coal ash, these revisions are due within three years. In cases where EPA has not yet made such a determination, it must at the very least review the regulations every three years to ascertain whether such a revision is necessary. If it determines that revision is necessary, it has not earned a reprieve from the deadline; both review and any necessary revision must occur within the three-year window.\textsuperscript{301}

Of the three exemptions and exclusions investigated in this article, the exemption of E&P wastes is the most complicated. While Congress enacted the exemption, at least temporarily, it also left EPA with the possibility of undoing it, as well as unrestricted power to regulate the wastes under its non-hazardous Subtitle D. Through this background and power, one can see both of this article’s premises at play.

First, EPA has played a central role in laying the groundwork for Congress to enact the Bentsen Amendment and then in keeping the exemption in place as enacted for 35 years. EPA created the deferral for “special wastes” when it had unrestricted power under RCRA, and Congress used the agency’s reasoning to enact the deferral as the Bentsen and Bevill Amendments. In its Regulatory Determination, EPA opted to leave the exemption in place on the grounds that it could craft necessary regulations under its unaffected Subtitle D powers to regulate E&P wastes properly. But the record shows no further action by EPA on this promise.

Second, unlike certain exemptions, EPA has a relatively large amount of unused power under the restrictions of the Bentsen Amendment. There is no question that EPA has the power to promulgate the tailored Subtitle D regulations. EPA has a clear guide forward through its recent promulgation of Subtitle D regulations for coal ash, another of the “special wastes.” The only obstacle toward taking this action for E&P wastes is EPA’s own political will.

CONCLUSION

The oil and gas industry has a unique amount of exemptions and exclusions from our environmental laws, and these exemptions and exclusions have stood for far too long. With the modern oil and gas production boom, the industry’s toxic footprint and environmental impacts have increased many times over, and the continued exemptions now have a greater cost on our environmental and public health.

\textsuperscript{300} Appalachian Voices, 989 F. Supp. 2d at 53–54.
\textsuperscript{301} Id. at 54.
Toward the goal of ending or lessening the burden of these exemptions and exclusions, this article has sought to demonstrate two key points. First, Congress enacted each of these provisions, but EPA has played a key role in laying the groundwork, making the case for their enactment, and most importantly maintaining these exemptions and exclusions for decades. Where Congress left EPA the regulatory power to undo the exemptions, EPA has failed to use this power. Where Congress left EPA with the ability to regulate some aspect of the industry’s practices and impacts outside the exemption, such as in SDWA, EPA has also failed to act.

Second, in connection with these points, there is much more that can be done without the action of Congress. While the best-case scenario certainly would be one in which Congress has a change of heart and opts to repeal its exemptions, this is not the only way forward. None of these exemptions is absolute. Each of these exemptions and exclusions either leaves a regulatory “escape hatch” that EPA has authority to use, such as promulgating tailored Subtitle D regulations under RCRA or adding the oil and gas extraction industry to the TRI, or leaves EPA and the delegated state agencies with remaining areas of authority, such as regulating fracking with diesel under SDWA.

As with the history leading to these exemptions and keeping them in place, the responsibility for their solution is in EPA’s hands.
EXTERNALIZING THE COSTS OF HAZARDOUS WASTE
FROM THE UNITED STATES

By Sarah Westervelt & Whitney Beckham

Introduction ............................................................................................... 637
I. History of Hazardous Waste Disposal in the United States ............... 637
   A. International Concern over Hazardous Waste Injustices ............ 640
II. Creation of the Basel Convention: Initial Goals & Parties to the
    Convention ......................................................................................... 640
   A. Undermining Original Party-Goals: Requirements of the Basel
      Convention to this Day ................................................................. 642
   B. Reclaiming Original Purpose: The Basel Ban Amendment ....... 644
   C. Electronic Waste: A Growing Concern for the International
      Community ..................................................................................... 645
III. Current Status of the Basel Convention ............................................ 648
    A. Ratifications of the Basel Convention ................................. 648
    B. United States: Reasons for Not Ratifying Basel .................... 649
       1. Legal and Practical Implications of Basel Ban on Trade Between
          Parties & Non-Parties .............................................................. 651
       2. The OECD Treaty: Only Applicable to Developed Countries 653
    C. Ethical and Diplomatic Implications of United States Non-
       Ratification of Basel & Its Ban Amendment ............................ 654
IV. Recommendations for the United States ............................................ 656
    A. Either the United States Should Simultaneously Ratify the Basel
       Convention and its Ban Amendment or Neither ................. 657
    B. Improve Global Enforcement .................................................. 658
    C. Pass a Federal Export Ban ....................................................... 658
    D. Use Certified E-Stewards Recyclers ....................................... 659
    E. Adopt Laws for Production of Non-Toxic Products ............... 660
Conclusion ............................................................................................... 661
INTRODUCTION

The history of hazardous waste pollution in the United States is marked by cost externalization and by significant impacts on the international community, despite the fact that most nations have adopted a United Nations treaty to restrict “trade” in hazardous wastes. This treaty is called the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (“Basel Convention”).1 The United States is the only developed nation in the world that is not a Party to the Basel Convention.2

Part I of this article will first explore the accumulation of hazardous waste in the United States and reactive federal legislation during the last four decades of the Twentieth century. It then provides a brief history of international events that led to the creation of the Basel Convention and its Ban Amendment.3 Part II of the article discusses the first two decades of the Basel Convention and the Ban Amendment, creating a lens to analyze the United States’ non-Party status to the Basel Convention. Part III discusses the current status of the Basel Convention, including ratifications, and a separate treaty that the United States has ratified, explaining the legal and other implications of the United States not ratifying Basel. Finally, Part IV of this article recommends actions for the United States to take in order to emerge from its current status into a responsible global citizen relative to its hazardous waste management.

I. HISTORY OF HAZARDOUS WASTE DISPOSAL IN THE UNITED STATES

The 1960s and subsequent decades saw the United States pass various federal laws to mitigate environmental damage caused by pollution after years of industrialization.4 The United States Environmental Protection

---

4. See ENVIRONMENTAL POLITICS AND POLICY: THEORIES AND EVIDENCE 3 (James P. Lester ed., 2d ed. 1995). These laws include the following major federal environmental legislation: the Solid Waste Disposal Act and the Water Quality Act (1965); the Clean Water Restoration Act and the National Environmental Policy Act (1966); the Federal Water Pollution Control Act and the Coastal
Agency (“EPA”) has defined hazardous waste as “waste that is dangerous or potentially harmful to our health or the environment.” The period between 1960 and 1976 revealed a growing accumulation of hazardous waste and an urgent need for disposal plans. A Congressional effort to monetize decades of hazardous waste dumping created two kinds of costs: (1) front-end costs to comply with new regulations and (2) back-end costs of potential fines for non-compliance. This led to a large number of abandoned hazardous waste sites, concern over how these sites would be cleaned, and questions of liability.

National concern over hazardous waste disposal led to the passage of two Congressional acts addressing the issue. In 1976, Congress passed the Solid Waste Disposal Act, later changed to the Resource Conservation and Recovery Act (“RCRA”). The goals of RCRA, as outlined by the EPA, are:

- To protect human health and the environment from the hazards posed by waste disposal;
- To conserve energy and natural resources through waste recycling and recovery;
- To reduce or eliminate, as expeditiously as possible, the amount of waste generated, including hazardous waste; and

---


8. Beck, supra note 6; Times Beach Residents, supra note 6. Both the Love Canal and Times Beach cases created a need for federal intervention in the cleanup of those facilities to restore community health.

To ensure that wastes are managed in a manner that is protective of human health and the environment.\textsuperscript{10}

In 1980, Congress reacted to the vast number of hazardous waste sites through the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA” or “Superfund”).\textsuperscript{11} Today, RCRA and CERCLA remain the major federal acts that govern the United States’ domestic hazardous waste management. While RCRA and CERCLA did address the domestic hazardous waste problem, the issue of where the hazardous waste would end up remained. It became common practice for hazardous waste to be gathered and stored in containers.\textsuperscript{12} These containers were either buried within the United States, or increasingly shipped to another country, and typically a developing country where costs were significantly lower.\textsuperscript{13}

The rest of the developed world also began to appreciate the health and environmental impacts of hazardous waste and to experience multiple costs for properly managing hazardous waste during the 1960s and 1970s.\textsuperscript{14} Industrialized nations producing large amounts of toxic waste began to devise ways to reduce the costs of hazardous waste management and at the same time protect the health of their own citizens and environments.\textsuperscript{15} Accordingly, the profit-minded and protectionist practice of exporting hazardous waste from developed to developing countries became customary.\textsuperscript{16} The shipment of hazardous waste from developed to developing nations has been referred to as “toxic colonialism.”\textsuperscript{17}

\begin{itemize}
  \item \textsuperscript{13}Id.; see Laura A. W. Pratt, Decreasing Dirty Dumping? A Reevaluation of Toxic Waste Colonialism and the Global Management of Transboundary Hazardous Waste, 35 WM. & MARY. ENVTL. L. & POLICY REV. 581, 584 (2011) (describing how disposal costs are lower when exporting to a developing country).
  \item \textsuperscript{14}See Pratt, supra note 13, at 592 (discussing the beginning of toxic waste regulations).
  \item \textsuperscript{15}See id. at 590 (explaining how exporting hazardous waste can be “cost-effective” for hazardous waste producers in developed countries).
  \item \textsuperscript{16}See id. (discussing the role money plays in toxic colonialism).
\end{itemize}
A. International Concern over Hazardous Waste Injustices

The 1980s revealed major international scandals associated with the hazardous waste trade. In 1988, five ships transported 8,000 barrels of hazardous waste, including toxic PCBs and solvents, from Italy to the small town of Koko, Nigeria. Italy exchanged the hazardous waste for the equivalent of $100 monthly rent paid to a Nigerian landowner to use his farmland for outdoor storage of the hazardous waste. The Nigerian landowner died, reportedly due to “cancer of the throat,” within a year of the arrangement.

The Khian Sea barge incident is another example of a major toxic waste injustice that galvanized nations around the world to take action. In the 1980s, a barge carrying 14,000 tons of toxic incinerator ash from Philadelphia was towed to Haiti, where the workers dumped a portion of the toxic ash before the Haitian government stopped them and sent the barge on its way. It sailed for the next 27 months, changing its name, owner, and flag state several times. Unable to unload the infamous cargo in any port, the crew was believed to have dumped much of it into the Indian Ocean. This incident was one of many scandals that triggered international outrage at the emerging global hazardous waste crisis.

II. Creation of the Basel Convention: Initial Goals & Parties to the Convention

The hazardous waste incidents of the 1980s proved to be the last straw for many nations. They came together to create a legal trade barrier under the umbrella of the United Nations Environment Programme (“UNEP”). The relationship between waste and trade is proportional; UNEP recognized...
that the increase in hazardous waste would increase the hazardous waste trade.\(^{24}\) In 1987, UNEP adopted the Cairo Guidelines and Principles for Environmentally Sound Management of Hazardous Wastes (“Cairo Guidelines”), which put the onus on the exporter by requiring “notification to receiving and transit nations of any export and consent by those nations prior to export.”\(^{25}\)

The international community recognized the Cairo Guidelines, but with virtually no international laws pertaining to trade in hazardous waste there was no framework for enforcement at the country level.\(^{26}\) In this milieu, nations came together to create a legally binding treaty with criminal penalties to protect developing countries from receiving the toxic spoils of rich countries.\(^{27}\) Unfortunately, the hazardous waste trade is still going on today.

Using the Cairo Guidelines as a working draft, the original 82 signatory nations of the Basel Convention attempted to completely ban hazardous waste movement from developed to developing countries.\(^{28}\) This was the original purpose of the Basel Convention, based on the principle of environmental justice—that no group of people deserves a disproportionate burden of toxics simply because of their social, racial, or socio-economic status.\(^{29}\) The Parties hoped to create this Convention as a complete hazardous waste wall between developed and developing nations—effectively ending toxic colonialism.\(^{30}\) Unfortunately, in 1989 the 82 original signatories completed and adopted the Basel Convention without this outright ban.\(^{31}\) The Basel Convention allowed Parties a few years to


\(^{25}\) Id.

\(^{26}\) See id. (describing how “UNEP wanted to enlarge the scope of their international regulation of hazardous waste” after the adoption of the Cairo Guidelines).


\(^{29}\) The EPA defines environmental justice as “the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.” OFFICE OF ENVTL. JUSTICE, U.S. ENVTL. PROT. AGENCY, TOOLKIT FOR ASSESSING POTENTIAL ALLEGATIONS OF ENVIRONMENTAL INJUSTICE 9 (2004), available at http://www.epa.gov/environmentaljustice/resources/policy/ej-toolkit.pdf [http://perma.cc/5KEW-QTE7].

\(^{30}\) See Pratt, supra note 13, at 600–01 (noting that a “total ban” has been a part of the negotiations from the beginning).

\(^{31}\) Basel Convention, supra note 1, at 126–48.
transpose the Convention’s requirements into their own domestic laws, and the full Convention went into legal force in 1992. The United States was not among the Parties, and to this day, has signed but not ratified the Convention.

A. Undermining Original Party-Goals: Requirements of the Basel Convention to this Day

The United States played an integral role in shaping the Basel Convention. Just before Basel was adopted in 1989, the United States led an effort that succeeded in removing the complete ban on exporting hazardous waste from developed to developing countries. Instead of a ban from rich to poor, countries agreed to a procedure called “Prior Informed Consent,” requiring government-to-government notification and consent before shipping hazardous waste between any Basel Parties. However, six years later in 1995, the Parties passed a consensus decision to amend the Convention, to later achieve this original goal.

Today, 181 countries—out of the total 193 United Nations member states—have ratified the Basel Convention. The United States is the only developed country in the world that has not ratified this treaty to restrict the trade of hazardous waste. A few developing countries have also not ratified; however, some of these are fairly new countries, like South Sudan, that are struggling with fundamental issues of governance.

32. See Parties to the Basel Convention, supra note 2 (showing the delay before legal enforcement to allow time for domestic enactments and the ratification of the Basel Convention by more countries).

33. See id. (showing how the United States is one of the few nations that has not ratified the Basel Convention).

34. See Pratt, supra note 13 (explaining that as ratified, the Basel Convention does not ban the export of hazardous waste as intended).


36. The Basel Convention Ban Amendment, supra note 3; see infra Part II.B (explaining the Ban Amendment proposal).

37. Parties to the Basel Convention, supra note 2.

38. Id.

39. See id. (showing how not all of the United Nations member states have ratified the Convention).
What does Basel call for in those countries that have ratified it? The Basel Convention contains both “soft law”—non-legally binding principles (e.g. efforts aimed at prevention)—as well as “hard law,” which specifies legally binding actions to be taken by Parties and criminalizes illegal traffic in hazardous wastes. Basel regulates hazardous waste destined for both disposal and recycling because nations drafting the Convention understood the perils of allowing an exporting country to simply label hazardous waste as destined for “recycling” and fall out from under Basel regulation. Such relabeling would likely become the new norm, if allowed.

First, the Convention calls for countries to minimize the generation of hazardous waste. Second, if hazardous waste is created, Basel calls on Parties to use environmentally sound management of hazardous waste within their own countries, to the extent possible. This self-sufficiency principle is, of course, intended to provide incentives for Parties to create less hazardous waste. Third, Basel calls on nations to minimize waste exports, recognizing the risks inherent in transporting hazardous materials (increasing possibilities of accidents and exposures), particularly to other countries that may or may not have the broad legal, technical, democratic, and social framework necessary for properly managing hazardous waste long term.

In addition, Basel provides a set of definitions for hazardous waste, which each Party interprets relative to the contents and destinations of their waste shipments. Specifically, Parties must examine and characterize each shipment according to its hazardous characteristics (such as leachability, toxicity, flammability, corrosiveness, etc.) and determine if it is destined for a recycling or disposal destination. Furthermore, a clause in the Basel Convention prevents Parties to the Convention from trading in hazardous materials with non-Parties (including the United States) unless those non-Parties are members of other bi- or multilateral agreements controlling hazardous waste. The United States has only ratified one other multilateral treaty on the transboundary movement of hazardous waste.

40. Basel Convention, supra note 1, at 132.
41. Id. at 155–56.
42. Id. at 131.
43. Id.
44. Id. at 132.
45. Id. at 129.
46. See id. at 132–33 (requiring proper labeling of hazardous waste shipments).
47. Id. at 132.
But the original goal of the Basel Convention was not achieved; it failed to stop developed countries from trading in hazardous waste with developing countries. Instead, it set up the Prior Informed Consent protocol whereby any Basel Parties are allowed to ship to any other Party (developed or developing) as long as the exporting government first contacts the importing and transit governments using a written notification procedure and receives written consent from them to accept the shipment. The importing country have a facility capable of environmentally sound management of that particular type of hazardous waste.

Even though the Convention failed to achieve its outright ban from developed to developing countries, it did achieve a limited outright ban of hazardous waste. To this day, it bans Parties’ hazardous waste only to Antarctica.

B. Reclaiming Original Purpose: The Basel Ban Amendment

In 1989, after the Basel Convention failed to put up a complete legal barrier against transboundary movement of hazardous waste from developed to developing countries, African countries walked out in protest and developed their own regional treaty called the Bamako Convention.

Developing countries eventually returned to the Basel Conference of the Parties, and in 1995, Parties passed a consensus decision (the United States having no vote as a non-Party) to amend the Basel Convention to achieve the outright ban on hazardous waste going from developed to developing countries for any reason. The Basel Ban Amendment was adopted as a legally binding instrument (not yet in full legal force), with criminal penalties for violators. It is important to note that this blatant trade barrier was adopted in an era otherwise characterized by a...

49. See Pratt, supra note 13, at 601 (explaining how the failure of the Basel Convention to stop developed countries from exporting hazardous waste to developing countries sparked the passage of the Ban Amendment).
50. Basel Convention, supra note 1, at 134.
51. Id. at 132.
proliferation of global free trade agreements (WTO, NAFTA, FTAA, etc.).56

This Amendment is a critical landmark. Once it goes into full legal force, it will finally disallow the transboundary movement of hazardous waste from developed to developing nations for applicable Parties.57 Globally, the Ban Amendment will act to prevent the externalizing of costs to developing nations. The Ban Amendment will function as a separate legal instrument until it has been ratified by a minimum number of Parties.58 Currently, 80 Basel Parties have separately ratified the Ban Amendment, putting it on track to become part of the Basel Convention itself in upcoming years.59 In the meantime, some countries have already put it into legal force domestically; the European Union countries, for example, have not only ratified the Basel Ban Amendment,60 but have fully implemented it in national laws, such as their Waste Shipment Regulations.61 This means European Union countries are barred by law, unlike the United States, from shipping hazardous waste to developing countries.

C. Electronic Waste: A Growing Concern for the International Community

Electronic waste (“e-waste”) is a massive hazardous waste stream with 20 to 50 million tons of waste generated globally per year.62 There is significant toxicity in the e-waste stream.63 Heavy metals including lead, cadmium, mercury, beryllium, and arsenic are present in electronic waste.64 E-waste also contains halogenated materials (such as fluorine, chlorine,
etc., that can create dioxins and furans when openly burned), and rare earth metals.65

Unlike many other countries that have passed national laws to deal with e-waste, the United States government has not addressed the large-scale hazardous waste problem nationally.66 Because of this, 25 states have passed separate electronic waste laws to collect and recycle e-waste, but only the federal government has jurisdiction over exports.67 This means state governments cannot legally prevent e-waste from going to China, India, or any other nation.68 In a country that has not ratified the Basel Convention, much less the Ban Amendment, and does not monitor and control its exports of hazardous e-waste, there are only estimates of the volumes going off-shore. According to anecdotes from the recycling industry, an estimated 80% of what is being collected for recycling is being exported.69

In 2002, Basel Action Network (“BAN”), a non-profit environmental group dedicated to protecting the global environment based on the Basel Convention, released a documentary film called Exporting Harm, with the first images of what happens to our e-waste in Guiyu, China, one of a number of Chinese destinations for United States e-waste.70 There, primitive riverside acid baths were used to recover gold from a mix of heavy metals, dumping the rest of the metals and spent acids directly into rivers.71 The documentary also documented families living and working in villages that burn computer wires in open fires in order to liberate the copper, while likely creating invisible, odorless, and highly toxic halogenated dioxins and furans in the process.72

65. Id.
66. Id.
71. Id.
72. Id.
In 2005, Basel Action Network went to Nigeria to document in a short film what some claimed was an alternative to sending e-waste to China for “recycling.” Instead, the rationale for exporting United States hazardous waste to Nigeria became “bridge the digital divide”, i.e. send non-working electronics for repair and reuse. Although Lagos, Nigeria was found to have many skilled workers trained to repair electronics, much of it ended up in both formal and informal waste dumps. Frequently, much of the e-waste accumulated around residential areas. When the piles grew too high, they were burned, one of the most environmentally and occupationally damaging methods of managing this waste stream.

In 2006, Basel Action Network went to Ghana and found children burning fields of e-waste and breaking unwanted CRT televisions and monitors, each containing an average of five to eight pounds of lead. In 2008, the investigative television program called 60 Minutes aired an award-winning story featuring BAN. In the 60 Minutes report, it was revealed that, even though BAN had been to Guiyu, China six years earlier, “recyclers” had moved their visible, open air burning operations indoors where the occupational hazards were even higher. The toxic by-products, which were still being released into the air, were now accumulating indoors and exposing workers to even higher concentrations.

In sum, exporting hazardous electronic waste to developing countries externalizes costs and impacts, and damages human health and the global environment.
ecosystem in ways that are long term and profound. There are deep social and environmental injustices that underlie externalization of toxic e-waste to those least able to deal with it, and these injustices are in violation of their laws. When the Convention was drafted in 1989, e-waste was not a big topic. 82 Today, in the Basel Convention’s Conference of the Parties, hazardous e-waste is one of the most ubiquitous and compelling issues that nations are trying to address within this legal framework. 83 Complicated technical guidelines are now being negotiated under Basel, seeking global clarity around complex issues such as exports of used electronics for repair and reuse. 84

III. CURRENT STATUS OF THE BASEL CONVENTION

According to BAN in one of its briefing papers:

Treaties are living and growing instruments. Since its adoption in 1989, the Basel Convention on the Transboundary Movement of Hazardous Wastes and their Disposal has evolved significantly from its original minimalist approach to controlling trade in wastes. The Basel Convention has now adopted hundreds of decisions, a protocol, an amendment, and has amended its annexes. 85

A. Ratifications of the Basel Convention

In the 26 years since the Basel Convention first went into legal force with 20 country ratifications, most nations in the world have now ratified this global treaty achieving a legal framework to restrict trade in hazardous waste. 86 As of mid-February 2015, 181 out of 193 United Nation member nations have ratified the Basel Convention, including almost all South

---

86. Parties to the Basel Convention, supra note 33.
American, African, and Asian countries. Only a handful of countries in the world have not ratified this legal trade barrier for hazardous waste; some of these non-ratifying countries include Haiti, South Sudan, and the United States.

B. United States: Reasons for Not Ratifying Basel

Although the United States may have prepared legislation to ratify Basel, there has not been the political will since the Convention’s adoption in 1989, despite the fact that the United States signed the Convention, indicating intent to ratify. Since the Clean Air Act and Clean Water Act were enacted, there has been a persistent backlash within the business community against any legal restrictions perceived to limit United States business interests, despite evidence to the contrary. The United States scrap industry, for example, represented by the Institute of Scrap Recycling Industries, has chosen for years not to incorporate Basel definitions of hazardous waste and restrictions in its trade specifications for scrap materials. Under the label of “commodities,” the United States exports hazardous waste; meanwhile, 181 other nations have ratified a legally binding treaty to stop free trade in toxic wastes.

Without Basel restrictions on United States exports, simple economic principles drive its hazardous waste to the highest bidders globally, with devastating long term impacts on the global commons. Businesses in one of the richest countries in the world can generate revenue by exporting their hazardous waste rather than paying to have it responsibly managed in the United States or the Global North. This practice leaves little motivation to ratify a United Nations treaty and its amendment, which erect a legal barrier to trade. In fact, between 1989 and 1992 (a time when motivation was high to ratify the Basel Convention), there were at least 11 bills introduced in the House that would have either pushed the United States to ratify the Basel

88. See id. (excluding Haiti, South Sudan, and the United States as countries that ratified the Basel Convention).
Convention or at least forced federal law to comply with the Convention. None of these bills came to fruition.

In addition to the attraction of generating revenue from hazardous waste exports, United States businesses can also avoid Superfund liabilities by sending their hazardous waste offshore because CERCLA cannot be enforced extraterritorially. Ratifying the Basel Convention would add a layer of legal restrictions currently not present, requiring United States exporters to seek government to government “notification and consent” for transboundary movement of Basel hazardous wastes, regardless of CERCLA limitations. These legal restrictions, of course, are not happening.

Furthermore, if the United States were to ratify Basel, it would be obliged to transpose the Basel definitions of hazardous waste into United States domestic laws. Changing the definition would trigger a revision of the RCRA, for example. Also the United States would be legally obligated to enforce the treaty, including controlling and monitoring its exports and imports of the newly defined hazardous wastes. Further, customs agencies, EPA, and other government agencies would need to learn these new definitions.

The old notion that protecting the environment will harm productivity and the economy has been repeatedly questioned and increasingly debunked in the past decade. In fact, in the United States, responsible recyclers have created a coalition to lobby for a bill that calls for keeping hazardous e-waste in the country precisely for economic reasons such as, to create jobs and to supply the recycling infrastructure.
unlikely that the United States will ratify Basel any time soon, a bill supported by both Democrats and Republicans, the Responsible Electronics Recycling Act, would make it illegal to export hazardous e-waste from the United States to developing countries.\footnote{Responsible Electronics Recycling Act, H.R. 2791, 113th Cong. (2013), available at https://www.congress.gov/bill/113th-congress/house-bill/2791 [http://perma.cc/PQ42-3YKD]. This bill was introduced by Rep. Green (D-TX) and was referred to the Subcommittee on Environment. Unfortunately, even with 22 co-sponsors, the bill has had no further action since Sept. 24, 2013.} Although this large coalition of United States recyclers and refurbishers has actively lobbied for the bill, it has languished for over two years without being heard in a powerful Republican-led committee, perpetuating uncontrolled United States exports of hazardous waste to developing countries.\footnote{Id.}

1. Legal and Practical Implications of Basel Ban on Trade Between Parties & Non-Parties

Because of a ban on hazardous waste trade between Parties and non-Parties in the Convention,\footnote{Basel Convention, supra note 1, at 132.} it is illegal for more than 140 developing countries that are party to Basel but not members of the Organization for Economic Cooperation and Development (“OECD”) to trade hazardous wastes with the United States. And yet, from the perspective of domestic laws, United States businesses are allowed to sell their hazardous waste to buyers in almost any country, even though it is illegal for developing countries that are also Basel Parties to trade with the United States.\footnote{See ALIBABA.COM, http://www.alibaba.com/ [http://perma.cc/SWT5-SQLH] (last visited Mar. 22, 2015) (providing international goods for global trade from a number of nations); TBN ONLINE, http://www.tbnonline.com/ [http://perma.cc/FA2R-XMYM] (last visited Mar. 22, 2015) (offering global trade for electronic equipment); EXPORTERS.SG, http://www.exporters.sg/productdir.asp [http://perma.cc/Q7CF-Z9P5] (last visited Mar. 22, 2015) (providing products from different trade networks).} In other words, the United States failure to control its exports of Basel-regulated wastes results in illegal trafficking to most developing countries. So why is there a regular flow of containers of hazardous waste leaving the United States to Hong Kong, China, and other developing nations?\footnote{Indonesia Turns Back Illegal Shipment of E-waste from USA “Recycler”, THE BASEL ACTION NETWORK, http://ban.org/ban_news/2010/100301_indonesia_turns_back.html [http://perma.cc/38PA-9GQ7] (Mar. 1, 2010) (“It is estimated by Hong Kong authorities that 50–100 containers of e-waste enter the port of Hong Kong alone each day. Almost all of this comes from the United States according to BAN.”).} Because it has not ratified the Basel Convention, the United States has no legal obligation to follow it. Moreover, it has not put controls in place to respect laws in importing Basel-member countries as is required under the
Convention. Thus, the United States allows its exporters to freely arrange business-to-business transactions without engaging importing and transit governments to determine the legality of any particular waste trade as called for in the Basel “Prior Informed Consent” procedures.

The fact remains, however, that once United States shipments move outside of United States territory—usually the 200 mile off-shore limit known as the Exclusive Economic Zone (“EEZ”)—those shipments fall under international law and are usually illegal for the more than 140 developing countries to import from a non-Party. But it is well understood that trying to control illegal trafficking at importing borders is very challenging. As the United States discovered after the September 11th tragedy, it is very difficult for importing countries to adequately protect their borders from potential risks hidden in incoming containers. Negative impacts on commerce, inadequate legislation, and lack of capacity at the borders limit most countries (particularly developing countries) from adequately controlling imports.

For importing countries, the challenge of controlling illegal imports of Basel wastes from the United States is further complicated by the fact that many exporters simply mislabel their shipments as some sort of benign materials. For example some exporters use labels like “used equipment for reuse” to avoid the attention of customs officials. In fact, exports of electronic waste “for repair” can result in the transboundary movement of hazardous components, such as bad batteries, mercury lamps, circuit boards, and leaded CRT glass for disposal in the importing country; import of these hazardous parts clearly violates the intent of the Basel Convention. The effects of these hazardous wastes can be seen in developed nations where there are burning fields of e-waste. Local citizens, whether scavenging a few materials of value or simply living near...
the smoldering e-waste dumps, suffer the ill-effects through pollution of air, water, and soil and direct exposures.110

2. The OECD Treaty: Only Applicable to Developed Countries

Although the United States has not ratified the global United Nations treaty restricting hazardous waste trade, it has ratified a multi-lateral environmental agreement (“MEA”) pertaining to the trade in hazardous waste between the 34 OECD countries.111 It is important to understand that the OECD trade agreements apply only to the developed OECD countries.112 Because multilateral and bilateral agreements are allowed under Basel, it is legal for the United States to trade hazardous waste only with the other 33 developed Basel countries that have also ratified the OECD agreements, including Canada, Japan, Australia, and much of Europe.113 Consequently, the United States controls hazardous waste exports to other developed OECD countries, but fails to control exports of its hazardous waste to developing countries, where risks and impacts are the greatest.

However, according to BAN:

This legally binding OECD decision (C(86)64(Final)), which requires Prior Informed Consent (“PIC”) for all hazardous wastes and prohibits exports if there is reason to believe that the wastes will not be handled in an environmentally sound manner, has never been properly implemented into U.S. national law. Thus, current U.S. law allows highly dangerous and unscrupulous exports of asbestos and lead acid batteries, lead/cadmium contaminated sludges, electronic wastes, etc. to developing countries – with few controls if any.”114


112. See Members and Partners, supra note 49 (describing OECD members as the “world’s most advanced countries”).

113. See id. (showing that the OECD countries are largely developed and include a number of European nations).

Aside from the fact that it is illegal for the more than 140 developing countries that are Basel Parties to accept hazardous waste from the United States, there are also moral and diplomatic issues to consider. The laws of physics dictate that heavy metals such as lead, mercury, and cadmium are immortal, i.e. they never disappear, although they may change form. When any country exports its hazardous wastes to countries that can least capable to manage them, illegality aside, these heavy metals along with persistent bio-accumulative chemicals are released into air, water, and soil leaving entire regions with widely dispersed immortal elements and persistent chemicals. Where primitive recycling techniques have been used to reclaim a few valuable materials from a hazardous waste stream without adequate occupational and environmental controls, the resulting toxics released into the environment can have profound long term effects, and not only for the local region. Many of these persistent chemicals bio-transport, carrying toxics around the globe into the far reaches of oceans, air, and land, into the food chain and many forms of life—virtually impossible to “clean up.”

C. Ethical and Diplomatic Implications of United States Non-Ratification of Basel & Its Ban Amendment

Politically and ethically, how can one of the world’s richest countries, and most wasteful, continue its unrestricted transfer of hazardous wastes to developing countries? What are the diplomatic implications of such ongoing activities, as most nations have agreed to restrict trade in hazardous wastes, while others have implemented the Basel Ban Amendment, completely banning trade in hazardous waste between developed and developing countries?

In 1991, an internal memo from the World Bank was leaked to the world press—a memo written by then World Bank Chief Economist (and United States citizen), Lawrence Summers. It articulated his influential point of view of the “impeccable” economic logic of toxic trade. According to the memo, he stated: “I think the economic logic behind dumping a load of toxic waste in the lowest wage country is impeccable and we should face up to the fact that . . . under-populated countries in Africa are vastly under-polluted.”


116. Id.

According to BAN, Summers’s words:

. . . resulted in a global outcry. Then Environment Minister of Brazil, Jose Lutzenberger, found words for the collective outrage in his written rebuke to the Bank and Mr. Summers. “Your reasoning is perfectly logical but totally insane . . . your thoughts [provide] a concrete example of the unbelievable alienation, reductionist thinking, social ruthlessness and the arrogant ignorance of many conventional ‘economists’ concerning the nature of the world we live in.”118

Today, the United States is ever present at Basel meetings as a non-voting “observer,” seeking to influence Parties and usually to weaken the implementation of the Basel Ban Amendment. According to Jim Puckett, executive director of the Basel Action Network, who has attended every Basel Conference of the Parties:

The United States has consistently taken an insupportable and embarrassing stance with respect to the Basel Convention. We are the country that creates the most waste per capita on earth, including hazardous waste. We are the country that is currently exporting electronic waste with impunity and without control. We are the country that has for years purported to care about the poor and less fortunate and have made this part of our foreign relations ethic—e.g. the Peace Corps, CARE, U.S. AID, etc. We are the country that invented the important term and principle of ‘environmental justice’. And yet our role at Basel—the world’s only waste treaty and arguably one of the few global instruments of environmental justice, has been a tragedy of conscience. We are the only developed country in the world that refuses to ratify the Convention, and stand with Haiti as the only two countries in the world that signed the Convention in 1989 but never ratified it, even some 25 years later. And despite not being a Party to the Convention, we actively work to undermine its most significant achievement—the ban on exporting hazardous wastes from developed to developing countries. Meanwhile, we turn a blind eye to thousands of illegal shipments of hazardous waste each year that leave our shores and are exported to countries that have forbidden

118.  Id.
their importation. We are perpetrators of environmental crime on an unfathomable scale.119

But this does not prevent the United States from going to the Basel meetings, even as a non-Party, and arguing for weaker global policies, while failing to contribute needed funds to the United Nations program. 120 The Basel Convention provides a legal framework designed to protect all communities around the world from hazardous waste; the United States should be playing a key role in supporting, strengthening, and enforcing this critical United Nations treaty.

IV. RECOMMENDATIONS FOR THE UNITED STATES

The United States’ failure to ratify the Kyoto Protocol,121 the United Nations Convention on the Rights of the Child,122 and the Basel Convention with its Ban Amendment123 has rightly resulted in a growing perception that the United States is out-of-step with the global community on many critical issues. Many perceive the United States as a nation that externalizes the real costs of doing business, particularly to countries with low labor costs, weak environmental and occupational laws and enforcement, lack of tort law for redress of wrongs, and little capacity to manage toxic metals and chemicals in both the short and long term.124

When it comes to hazardous waste trade, the United States is not controlling its exports beyond the 33 other developed countries, raising diplomatic and ethical questions as developing countries receive uncontrolled United States-generated hazardous wastes. These questions have become particularly visible as developing countries better transpose

119. E-mail from Jim Puckett, Exec. Director, Basel Action Network, to author Sarah Westervelt (Apr. 16, 2015, 18:22 EDT) (on file with author).


123. Parties to the Basel Convention, supra note 33.

Basel obligations into their domestic laws and enforce the ban on hazardous waste trade (for recycling and disposal) between Parties and non-Parties. In the international Basel meetings, developing countries voice significant concerns regarding hazardous waste from the developed countries. This hazardous waste results in high levels of immortal heavy metals, persistent bio-accumulative toxins, and other hazards in the importing countries, which are causing increasingly visible impacts on human health and the ecosystem. These impacts are not only local and regional, but inevitably global impacts, as wind and water carry the elements far and wide. Given the current United States status as the only developed country in the world that has not ratified the Basel Convention, what are the best ways forward?

A. Either the United States Should Simultaneously Ratify the Basel Convention and its Ban Amendment or Neither

In order to understand the following recommendation, it may be useful to first summarize the current legal realities for the United States. Because the United States is a non-Party to the Basel Convention, exports of hazardous electronic waste from the United States to most developing countries are illegal once they leave United States territory. Under the Convention, no Basel Party can trade in hazardous waste with a non-Party without a special Article 11 agreement. The United States has not ratified any multilateral hazardous waste agreements with countries outside of the OECD member countries. Therefore, most of the e-waste traffic currently going to Basel developing countries from the United States is illegal for those importing countries.

If the United States were to ratify the Convention alone, this trade would become legal between the United States and any consenting Basel developing countries, utilizing Basel’s “Prior Informed Consent” regime. But legally shipping United States hazardous waste to developing countries would conflict with the notions of environmental justice, best management practices for hazardous waste, United States global citizenship, and the


consensus decision by Basel Parties in 1995 to completely ban hazardous waste going from developed countries to developing countries.

Therefore, the United States should only ratify both the Basel Convention and its separate Ban Amendment *simultaneously*, or neither. Given the history of United States and the Basel Convention, it is highly unlikely that the United States will ratify the Ban Amendment any time soon. Therefore, it is far preferable that a legal barrier remains between the United States and developing countries. For this reason, the United States should not ratify the Basel Convention without the Amendment.

**B. Improve Global Enforcement**

Many nations are cooperating with international efforts to stop illegal trafficking of hazardous waste. Especially because the United States has not ratified Basel, it should be investing significantly in these efforts to prevent illegal trafficking from its shores to the more than 140 developing countries. The International Network for Environmental Compliance and Enforcement ("INECE") represents one such global effort. 128 Another is INTERPOL’s Project Eden, 129 which has developed a multinational strategy and database, but needs funding. While the United States has no legal obligations under Basel, it could be aggressively contributing to INTERPOL’s and INECE’s efforts, both financially 130 and programmatically, as they rely on the support and cooperation of member countries to share information about illegal shipments and to crackdown on the illegal trafficking.

**C. Pass a Federal Export Ban**

In lieu of ratifying both the Convention and the Ban Amendment, Congress could pass a federal bill to ban exports of hazardous e-waste from the United States to developing countries. Such a law would result in the following:

128. See *Who We Are*, INT’L NETWORK FOR ENVT’L COMPLIANCE & ENFORCEMENT, http://inece.org/about/who-we-are/ [http://perma.cc/2NFL-8VW6] (last visited Mar. 19, 2015) (“The International Network for Environmental Compliance and Enforcement (INECE) is a partnership of government and non-government enforcement and compliance practitioners from more than 150 countries. INECE’s goals are: raising awareness to compliance and enforcement; developing networks for enforcement cooperation; and strengthening capacity to implement and enforce environmental requirements.”).


130. United States funding to INTERPOL could be earmarked for Project Eden.
a) Create jobs in the United States. If the United States were to responsibly manage its hazardous waste in country instead of exporting it to the highest bidder globally, the large volumes of used electronics could supply the hungry United States recycling and refurbishing facilities struggling to compete with exporters. Keeping e-waste in the United States would also improve data security and hazardous waste management for corporate, government, and organizational customers when they need to get rid of used electronic equipment;

b) Provide an incentive to reduce United States generation of hazardous waste in the first place, solving the hazardous waste problem upstream, where the real leverage lies;

c) Contribute to better United States diplomacy as a global citizen;

d) Result in far more responsible management of toxic, leaching, corrosive, explosive, and otherwise hazardous substances and mixed wastes, using United States state-of-the-art technologies; and

e) Prevent harm to the global commons and particularly to the developing countries of the world, actively pursuing environmental justice for all people.

D. Use Certified E-Stewards Recyclers

There is now an accredited, independently audited certification program to help customers around the world identify globally responsible recyclers and refurbishers that operate in conformity with the Basel Convention and the Ban Amendment. 131 The program, www.e-stewards.org, provides recyclers and their customers with a rigorous standard and “conformity assurance” program. This auditing program defines responsible management of electronic waste relative to international trade, occupational health and safety, data security, reuse, downstream accountability, final disposition of toxic materials, site closure, and much more. 132 It is invaluable to have a rigorous voluntary certification program, helping to bring a high bar and transparency to a relatively new recycling industry that


exists in a dearth of occupational protections, hazardous waste laws, and hazardous waste disposal infrastructure in many countries.

E. Adopt Laws for Production of Non-Toxic Products

At the same time we work to prevent cost externalization via the export of pollution to poorer economies or the global commons, we also need to create incentives for solving the toxic waste problem upstream, in the design and production phase of the life cycle of products. It is there that is the most effective place to solve hazardous waste problems. Manufacturers redesign toxic products and processes to phase out toxic inputs, and create products that are designed to last, designed for recycling, and designed for the environment. Europe has passed a law restricting the use of some toxic metals and chemicals in new products. The United States could also require by law that manufacturers phase out the most hazardous substances from their products, creating a “level playing field” in which manufacturers compete to produce cleaner products for all.

Regardless of whether the United States ratifies the Basel Ban Amendment and the Convention, or adopts laws requiring the phase out of hazardous substances from products and processes, it is critical that individuals, companies, organizations, and governments push for reducing hazardous waste at its source through waste prevention. As a society, we can help shift the paradigm by purchasing the cleanest new electronic products, and communicate directly with manufacturers the importance of non-toxic products. Manufacturers repeatedly state that they are not highly motivated to redesign products for the environment because they do not hear from consumers asking for this. It is worth noting, however, that some manufacturers are developing innovative solutions. Dell, for example, is working on mushroom packaging, Asus has a pilot for bamboo

136. See id. at 162, 172 (citing the company 3M as an example of a company that redeveloped its program line in order to reduce their pollution per tonne of product).
casing surrounding a laptop, and there are prototypes for cardboard computer towers and printers, as well.\footnote{137}

As a nation, we should ensure that toxics (e.g. mercury and brominated flame retardants) are removed from our products and the hazardous waste stream. Furthermore, these toxics should be retired and properly managed, by placing them in long-term monitored hazardous waste storage, and not put back into new products.

**CONCLUSION**

As a member of the global community of nations, the United States is the only developed country unwilling to ratify the United Nations treaty adopted by most nations to reduce and legally restrain hazardous waste trade. Just as nations have decided not to allow free trade in slaves, endangered species, nuclear weapons, and other “bads,” most countries have also agreed not to consider hazardous waste as “goods,” despite any economic value they may have on the black market. But the United States continues to “go it alone,” transferring its moral and financial responsibilities and the real impacts of hazardous wastes to other countries.

Global society has tried to resist this kind of externalization for decades, particularly externalization to developing countries, in the form of the Basel Convention and its Ban Amendment. While enforcement of any law can be challenging, it is another matter altogether for the most powerful country in the world to refuse to adopt the global legal restrictions that 181 other countries have voluntarily adopted. The future of the planet is dependent upon the choices made by citizens/consumers, organizations, manufacturers, and governments, to reject toxic products, and the trade in the resulting hazardous waste. But as long as toxic products are manufactured, recycled, and disposed, the United States must become a far better global citizen, and not externalize the real costs and impacts of its hazardous wastes.
A COMPARISON OF E-WASTE EXTENDED PRODUCER RESPONSIBILITY LAWS IN THE EUROPEAN UNION AND CHINA

By Robert Reagan*

Introduction .................................................................................................................. 663
I. E-Waste Everywhere ............................................................................................... 664
   A. The Numbers .......................................................................................................... 664
   B. Guiyu, China ......................................................................................................... 665
   C. Loss of Resources ................................................................................................. 667
II. Extended Producer Responsibility ......................................................................... 668
   A. EPR Theory ........................................................................................................... 668
   B. EPR Laws .............................................................................................................. 670
III. Comparison of Critical Provisions of the WEEE Directive & China WEEE ... 672
   A. Recovery Requirement ......................................................................................... 672
      1. Scope ................................................................................................................ 673
         a. WEEE Directive .......................................................................................... 673
         b. China WEEE ............................................................................................. 673
      2. Collection Responsibilities .............................................................................. 674
         a. WEEE Directive .......................................................................................... 674
         b. China WEEE ............................................................................................. 675
      3. Informational Requirements .......................................................................... 675
         a. WEEE Directive .......................................................................................... 675
         b. China WEEE ............................................................................................. 676
      4. Comparison ...................................................................................................... 676
   B. Financial Responsibility ....................................................................................... 677
      1. WEEE Directive ................................................................................................ 677
      2. China WEEE ..................................................................................................... 678
      3. Comparison ...................................................................................................... 678
   C. Oversight of Recyclers ......................................................................................... 679
      1. WEEE Directive ................................................................................................ 680
      2. China WEEE ..................................................................................................... 680
      3. Comparison ...................................................................................................... 681
   D. Enforcement ......................................................................................................... 682
INTRODUCTION

Technological advances and economic development have made the world increasingly dependent on electronic devices. Electronics are so ubiquitous, that in 2013 the United Nations estimated that more people have access to cell phones than toilets.¹ This should come as no surprise: 1.75 billion cell phones were sold in 2012,² and cell phones are just one of the myriad of electronics available to consumers. With all these electronics buzzing around, a natural question is: where do they wind up?

The answer depends largely on where the product was discarded. Most electronics discarded in the United States go either to landfills or to China, while most of the electronics discarded in Europe find their way to India, Pakistan, or the west coast of Africa.³ Until recently, the issue for the international community was how to stop the flow of discarded electronics from the developed world to the developing world. The developing world is now facing a new electronic waste issue: domestically consumed electronics. In 2010, the United Nations estimated that sales of electronics would “rise sharply” over the next decade in China, India, and South and

¹ Yue Wang, More People Have Cell Phones than Toilets, U.N. Study Shows, TIME (Mar. 25, 2013), http://newsfeed.time.com/2013/03/25/more-people-have-cell-phones-than-toilets-u-n-study-shows/ [http://perma.cc/G58G-ZASC] (“Out of the world’s estimated 7 billion people, 6 billion have access to mobile phones. Far fewer—only 4.5 billion people—have access to working toilets.”).


Central America.4 This prediction has so far proven accurate: China is second only to the United States in the annual number of electronics sold.5

In 2009, China took its first step toward managing the large amount of domestically produced electronic waste (“e-waste”) when the State Council passed the Regulation for the Administration of the Collection and Disposal of Waste Electrical and Electronic Products (“China WEEE”).6 China WEEE is an extended producer responsibility law, and it is based on a similar law passed by the European Union in 2003, the Waste Electrical and Electronic Equipment Directive (“WEEE Directive”). This Article compares the two laws in an effort to recommend changes to China WEEE. Part I of this Article outlines the e-waste problem generally and in China particularly. Part II introduces the concept of extended producer responsibility and identifies four elements necessary for successful implementation of extended producer responsibility e-waste laws. Part III compares the key provisions of the WEEE Directive and China WEEE. Part IV recommends changes aimed at improving China WEEE.

I. E-WASTE EVERYWHERE

A. The Numbers

Tremendous amounts of electronics are sold every year. In 2012, more than 341 million computers, 119.5 million tablets, 238.5 million televisions, and 1.75 billion cell phones were sold worldwide.7 Increasingly, electronics are designed to have short life spans,8 which keep replacement rates high.9

5. Id.
The combination of high replacement rates and high annual sales translates to large numbers of obsolete electronics. In 2009, global generation of e-waste exceeded fifty-three million tons. 10

Most of the fifty-three million tons of e-waste found its way to China. Each year, some seventy percent of all e-waste is shipped to China. 11 There, e-waste is dismantled and recycled in a manner that degrades the environment and harms human health. 12 For China, domestic demand only exacerbates this problem. China’s Ministry of Industry and Information estimated that there were 747.4 million cell phones, 220 million computers, and 560 million television sets used in China in 2009. 13 In 2010, China produced some 2.3 million tons of e-waste, second only to the United States, which produced around three million tons. 14

B. Guiyu, China

Most of the electronics exported to China end up in Guiyu, China, the “e-waste capital of the world.” 15 There, over 150,000 migrants work sixteen-hour days, harvesting valuable materials from discarded electronics. 16 While primitive, e-waste recovery in Guiyu is remarkably organized. The work is completed in small-scale, family-run workshops that specialize in discrete tasks. 17

---

9. See ELECTRONICS TAKE BACK COALITION, supra note 7, at 4 (finding that sales of consumer electronics in 2013 exceeded sales in 2012 in tablets, “ultra mobile” computers, and cell phones, and were still high in overall PC sales).


12. See infra Part I.C.


16. Id.

While workers employ a variety of methods to dismantle the e-waste, there are some common techniques and themes. For instance, much of the work is conducted in open-air workshops. In some workshops, workers use hammers, screwdrivers, and occasionally electric drills to dismantle e-waste, which is then sold for re-use or to other workshops that specialize in other tasks. In the other workshops, laborers place circuit boards, computers, and other appliances over hot plates or fires to melt and recover solder and other materials. Additional materials are recovered by soaking microchips, circuit boards, and other components in acid, which is then discharged into nearby streams. In some workshops, families strip or burn wires and cables to separate the metal and plastic. In still other workshops, workers rip apart printer cartridges to access toner, aluminum, steel, and plastic. Any spare plastic is sorted by rigidity, color, or shine. Plastic that cannot be separated by look or feel is burned and classified according to odor and the color of the flame. Workshops then shred the sorted plastic, which is placed on vibrating platforms and washed to separate heavier metals from lighter metals and plastics. Unsurprisingly, the water used in this process contains high levels of toxic, suspended solids, and is discharged without treatment or re-use.

Much of the e-waste recovery in Guiyu is performed in the Beilin area of Guiyu. The work is turning Guiyu into a toxic dump. Soil and dust samples from workshops revealed dangerous levels of toxic metals and various organochlorides. Samples from workers’ homes showed high levels of toxic metals and organochlorides, suggesting that workers carry the metals and organochlorides home. Streams running alongside acid workshops were highly acidic and showed elevated levels of brominated...
flame retardants, phthalates, and various metals, including: antimony, cadmium, copper, mercury, and nickel.29

Not surprisingly, people living in Guiyu have elevated levels of lead and other toxins in their systems. A study conducted by Environmental Health Perspectives compared the blood lead levels (“BLLs”) of 165 children under six years of age in Guiyu, China with those of children under six in Chendian, China. Neither the children in Guiyu nor Chendian worked with e-waste.30 However, the average BLL of a child in Guiyu was 15.3 micrograms of lead per deciliter (μg/dL) of blood, whereas the average in Chendian was 9.94 μg/dL.31 The United States Centers for Disease Control and Prevention defines elevated BLLs in children under six as those in excess of 5 μg/dL of blood.32 Lead’s impact on development is well known, and studies have demonstrated deleterious effects on child development at even lower levels.33 The Environmental Health Perspectives study concluded that processing e-waste caused the elevated levels of lead.34

C. Loss of Resources

In addition to the human health and environmental contamination associated with improper recycling of e-waste, improper recovery raises another significant concern: the loss of valuable resources. Electronics contain several valuable and rare metals, many of which are lost due to improper recovery. For example, every year 320 tons of gold and 7,500 tons silver—or twenty-one billion dollars, the GDP of El Salvador—are placed into cell phones, computers, televisions, tablets, and electronic devices.35 Less than fifteen percent of these metals are recovered.36

29. See GREENPEACE, supra note 24, at 42 (explaining that river samples downstream of acid workshops contained between ten and thirty times the amount of dissolved metal than samples upstream from acid workshops).
30. Xia Huo et al., supra note 17.
31. Id. (Samples were taken from four areas in Guiyu: Beilin, Dutou, Huamei, and Loggang. The BLL range was 4.40 to 32.67 μg/dL. Children in Beilin—where most of the e-waste recycling takes place—had the highest average BLL of all the areas tested: 19.34 μg/dL.).
33. Id.
34. Id.
36. Id.
Limited recovery requires procurement of new resources, which means more mining. Mining is fiscally and environmentally costly because most of the metals required to produce electronics are extracted from expansive, open pit mines. One mine in Arizona, for instance, stretches two miles by three-quarters of a mile. Moreover, accessing metals in these mines necessitates large quantities of waste rock. In some mines, more than ten tons of waste rock is required to produce one ounce of gold.

Moving excess rock and processing the ores is also energy intensive. Moving the waste rock alone consumes between seven and ten percent of the world’s energy production. Once the waste rock is removed and the ore isolated, the ore must be processed. Separating the metal from the ore generates numerous toxins, such as sulfur dioxide, nitrogen oxides, and lead. Many of these toxins end up contaminating streams and groundwater. Mining releases more toxins into the environment than any other industry in the United States, and improper disposal prevents the recovery of these costs.

II. EXTENDED PRODUCER RESPONSIBILITY

A. EPR Theory

Extended producer responsibility has been trumpeted as a possible solution to all of issues listed above. The term and concept of extended producer responsibility (“EPR”) is relatively new. EPR as a concept and term was first used in 1990 by Thomas Lindhqvist in a report for the Swedish Ministry of Environmental and Natural Resources. Lindhqvist defines EPR as:

38. Id. at 27.
40. GROSSMAN, supra note 37, at 25.
41. Id.
42. Id. at 26–27.
43. Id. at 25, 31.
[A] policy principle to promote total life cycle environmental improvements of product systems by extending the responsibilities of the manufacturer of the product to various parts of the entire life cycle of the product, and especially to the take-back, recycling[,] and final disposal of the product. 45

EPR is an extension of both the polluter pays principle and take-back programs. 46 By combining these principles, EPR seeks to hold producers accountable for the negative effects of their products by making them financially responsible for the costs associated with recovery and recycling. While assigning recovery responsibilities to producers is a significant departure from the notion that municipalities should be responsible for waste disposal, “there is no obvious reason why government should manage waste instead of industry.” 47 Shifting management of waste from the people to the producers creates a natural incentive for producers to reduce waste, an incentive not present when the cost of waste management is borne by the people. 48

The theory of EPR is particularly attractive to those concerned about e-waste for at least three reasons. First, as discussed above, electronics contain a bevy of toxic material that is harmful to man and the environment if not treated properly. Second, improper disposal results in the loss of valuable resources and the inputs required to procure such resources. 49 Finally, proper and efficient recycling of electronics is closely tied to

45. Id. at v.
46. This Article refers to EPR as if it were a single waste management theory. In reality, EPR is an umbrella term for several types of laws that extend producer responsibility. Some types of EPR include: (1) financial responsibility EPR, which requires producers to pay the full or some part of the cost of collection, recovery, or final disposal; (2) physical responsibility EPR, which requires producers to take responsibility for the physical management of their products; (3) informative responsibility EPR, which requires producers to supply information on their products; (4) liability EPR, which makes producers responsible for environmental damage caused by their products. This Article uses “EPR” to mean wholesale EPR, which makes producers fully responsible for the entire life-cycle of their products. See Chris Van Rossem, Naoko Tojo, Thomas Lundhqvist, Extended Producer Responsibility: An Examination of its Impact on Innovation and Greening Products 5 (2006), available at http://www.greenpeace.org/international/PageFiles/24472/epr.pdf [http://perma.cc/6TZ4-SE8T].
48. Id.
design. Because each new model is built according to a different schematic, each new model requires different recovery techniques.50

Where there is a strong correlation between initial product design and recovery, and especially where that correlation extends to materials toxic to man and the environment, the logic of placing responsibility for end-of-life recovery on the producer is particularly strong. This is because placing such responsibility on the producer internalizes costs.51 Once producers are responsible for end-of-life recovery, the desire to remain competitive creates an incentive to reduce costs.52 By forcing producers to recycle their products, EPR creates an incentive to design products that are easier to recycle, to make fewer design changes, and to create products with less lead, cadmium, mercury, and other harmful materials.53 Thus, EPR laws hold the potential to fund recycling programs for e-waste and change the way electronics are manufactured, used, discarded, and recycled. EPR has the potential to make our electronics less harmful to man and the environment. As Lindhqvist states, “allocating full physical and economic responsibilities to manufacturers will encourage a shift towards providing the functions of the products in a more efficient way.”54

B. EPR Laws

While EPR laws, in theory, hold the potential to “encourage a shift towards providing the functions of the products in a more efficient way,” they must be carefully designed to be effective. To encourage producers to build more easily recycled products, EPR laws must be able to fully assign the costs of recovery and recycling to producers. To fully assign these costs, EPR laws must contain at least four elements: (1) a strong recovery requirement; (2) meaningful financial responsibility; (3) substantial oversight of recyclers; and (4) robust enforcement provisions.

Several countries have passed electronics EPR laws, including India,55 Japan,56 South Korea,57 and Brazil.58 And while there is no federal law in

51. Lindhqvist, supra note 44, at 50.
52. Id. at ii.
53. Id. at 10.
54. Id. at vi.
56. Sung-Woo Chung et al., Application of EPR to Recycling Policies in Japan, Korea, and Taiwan, in EXTENDED PRODUCER RESPONSIBILITY POLICY IN EAST ASIA: IN CONSIDERATION OF
the United States extending the responsibility of electronics producers, several states have passed EPR laws, including: Maine, Vermont, New York, New Jersey, Pennsylvania, Michigan, Texas, Washington, and Oregon. In 2003, the European Union (“EU”) passed the world’s first e-waste EPR law when it enacted the WEEE Directive. The WEEE Directive is considered the “largest, most comprehensive public-to-private transfer of responsibility for e-waste management thus far.”

The WEEE Directive states that its purpose is to:

[C]ontribute to sustainable production and consumption by, as a first priority, the prevention of WEEE and, in addition, by the reuse, recycling and other forms of recovery of such wastes so as to reduce the disposal of waste and to contribute to the efficient use of resources and the retrieval of valuable secondary raw materials. It also seeks to improve the environmental performance of all operators involved in the life cycle of EEE, e.g. producers, distributors and consumers and, in particular, those operators directly involved in the collection and treatment of WEEE.

The WEEE Directive seeks to accomplish this purpose by requiring Member States to compel electronics producers to recover and recycle e-waste in an environmentally responsible manner. The WEEE Directive has generally been considered a success in reducing the amount of e-waste that ends up in landfills and reducing the use of virgin materials. China’s e-
waste EPR law is based on the EU’s WEEE Directive.63 And because the WEEE Directive has successfully imposed comprehensive requirements on a diverse array of people across a significant geographical range,65 it is the natural law to which China’s electronics EPR law should be compared. The State Council passed China’s electronics EPR law, the Regulation for the Administration of the Collection and Disposal of Waste Electrical and Electronic Products (China WEEE), on February 25, 2009.67 The law was passed pursuant to the Clean Production and Solid Waste Laws.68 The purpose of China WEEE is to “regulat[e] the recovery and disposal of waste electrical and electronic products, [to] promot[e] the comprehensive resource utilization and the development of [a] circular economy, [to] protect] the environment, and [to safeguard] the human health.”69 While the purpose of China WEEE is similar to the EU’s WEEE Directive, Charles McElwee notes that “it bears little resemblance to the EU Directive.”70 The remainder of this Article will compare the four elements listed above in the WEEE Directive with China WEEE.

III. COMPARISON OF CRITICAL PROVISIONS OF THE WEEE DIRECTIVE & CHINA WEEE

A. Recovery Requirement

To be effective, EPR laws must ensure that producers recover their end-of-life, obsolete products. In the context of electronics, at least three elements are required for successful recovery. First, because electronics are so ubiquitous, an effective recovery requirement must force producers to recover a variety of electronics. Second, the law must make it simple for

64. Sachs, supra note 47, at 72.
65. See id. at 86 (comparing the United States and Europe and stating that Europe has a comprehensive policy); see also ERP Celebrates Recycling Success in Ireland on the 6th Birthday of the WEEE Directive, EUR. RECYCLING PLATFORM (Aug. 12, 2010), http://www.erp-recycling.ie/index.php?content=399 [http://perma.cc/T3AJ-C7PE] (stating the WEEE is the first compliance scheme to have operations in multiple countries).
66. See Sachs, supra note 47, at 68 (stating that the European EPR program can be “implemented at national and supranational scales” and that the EPR legislation has been adopted in 25 EU member states).
68. MCELWEE, supra note 63.
70. MCELWEE, supra note 63.
consumers to dispose of e-waste so that it stays out of the municipal waste stream. Finally, producers must be responsible for collection.

1. Scope

   a. WEEE Directive

   Article 2 of the WEEE Directive states that the law covers electronics listed in the Annexes. 71 Annex 1 lists the ten basic categories to which the law applies: (1) large household appliances; (2) small household appliances; (3) IT and telecommunications equipment; (4) consumer equipment and photovoltaic panels; (5) lighting equipment; (6) electrical and electronic tools; (7) toys, leisure, and sporting equipment; (8) medical devices; (9) monitoring and control instruments; and (10) automatic dispensers. 72 Annex 2 further defines the scope of the WEEE Directive by providing numerous example products in each of the ten categories listed in Annex 1. 73

   b. China WEEE

   The scope of China WEEE is substantially less than the WEEE Directive. China WEEE’s recovery requirements apply to “waste electrical and electronic products listed in the Catalogue of [W]aste [E]lectrical and Electronic Products for Disposal.” 74 The first Catalogue was released in early 2010 for comments, officially published on September 8, 2010, and approved by the State Council on January 1, 2011. 75 The Catalogue included five types of products: televisions, refrigerators, washing machines, air conditioners, and computers. 76

---

71. Directive on Electrical and Electronic Equipment (WEEE), art. 2.
72. Id. annex I.
73. Id. annex II (an exhaustive list of products that expands on the categories found in Annex I).
74. Regulation on the Administration of the Recovery and Disposal of Waste Electrical and Electronic Products, (China) art. 3.
76. First Product Catalogue of China WEEE Published, supra note 75.
2. Collection Responsibilities

a. WEEE Directive

The WEEE Directive provides extensive legislation on collection and recovery of e-waste. Importantly, the Directive imposes collection responsibilities on both the Member States and the distributors. Article 5 requires Member States to “adopt appropriate measures in order to minimise the disposal of WEEE in the form of unsorted municipal waste, to ensure the correct treatment of all collected WEEE and to achieve a high level of separate collection of WEEE.” 77 For WEEE from private households, Member States must ensure that:

(a) systems are set up allowing final holders and distributors to return such waste at least free of charge. Member States shall ensure the availability and accessibility of necessary collection facilities, taking into account, in particular, population density;

(b) when supplying a new product, distributors are responsible for ensuring that such waste can be returned to the distributors at least free of charge on a one-to-one basis as long as the equipment is of equivalent type and has fulfilled the same functions as the supplied equipment . . . ;

(c) distributors provide for the collection at retail shops with sales areas relating to EEE at least 400 m2, or in their immediate proximity, of very small WEEE . . . free of charge to end-users and with no obligation to buy EEE of an equivalent type . . . ;

(d) without prejudice to points (a), (b), and (c) producers are allowed to set up and operate individual and/or collective take-back systems for WEEE from private households . . . .78

Member States also must ensure producers, or third parties on their behalf, collect “WEEE other than WEEE from private households.”79

Article 8 expands on the collection responsibilities, adding that “Member States shall ensure that producers or third parties acting on their behalf set up systems to provide for the recovery of WEEE using best available techniques.”80 Importantly, Article 8 allows producers to recover

77. Directive on Electrical and Electronic Equipment (WEEE), art. 5 ¶ 1.
78. Id. ¶ 2(a)–(d).
79. Id.
80. Id. art. 8 ¶ 3.
WEEE either “individually or collectively.” Once e-waste is separated, the WEEE Directive prohibits it from being disposed of without first undergoing treatment.

b. China WEEE

Article 11 requires the state to:

[E]ncourage the producers of electrical and electronic products to recover waste electrical and electronic products by themselves or by entrusting distributors, repair institutions, after-sales service institutions or operators dealing in the recovery of waste electrical and electronic products. The distributors, repair institutions and after-sales service institutions of electrical and electronic products shall set up prompts on the recovery and disposal of waste electrical and electronic products in the conspicuous positions of their business premises.

Recovered waste “shall be disposed of by the disposing enterprises with the qualifications for disposing of waste electrical and electronic products.”

3. Informational Requirements

a. WEEE Directive

In addition to the WEEE Directive’s recovery requirements, the Directive includes informational requirements aimed at improving collection and recovery. Under the WEEE Directive, Members States may, but are not compelled to, require producers to inform customers at the time of purchase of the cost of collection, treatment, and disposal of the product. Producers must inform users of electronics in private households of several things, including: (1) not to dispose of e-waste in the unsorted municipal waste stream, (2) to dispose of e-waste in an available collection system, (3) the user’s “role in contributing to re-use, recycling and other forms of recover of [e-waste],” and (4) the effects of e-waste on human

---

81. Id.
82. Id. art. 6.
83. Regulation on the Administration of the Recovery and Disposal of Waste Electrical and Electronic Products (China), art. 11.
84. Id.
health and the environment. Finally, to discourage individuals from placing their e-waste in the municipal waste stream, the WEEE Directive requires producers to include the following symbol on all electronics.

![Symbol Image]

Figure 1

b. China WEEE

China WEEE contains no similar informational requirement. Article 10 comes closest to the WEEE Directive’s informational requirement. It states: “[s]uch information as content of relevant toxic or hazardous substances and prompt recovery and disposal shall be stated on the electrical and electronic products or in the third product instructions.”

4. Comparison

The WEEE Directive’s recovery requirements are much stronger and more detailed than China WEEE’s requirements. First, the WEEE Directive applies to a much broader scope of electronics. Second, the WEEE Directive requires Member States to compel producers to collect their waste, whereas China WEEE merely “encourages” recovery. Third, the WEEE Directive’s information requirement goes much further toward keeping e-waste out of the municipal waste stream because it is much more explicit than China WEEE’s informational requirement.

86. Id. ¶ 2 (a)–(d).
87. Id. ¶ 4.
88. Id. annex IX.
89. Regulation on the Administration of the Recovery and Disposal of Waste Electrical and Electronic Products (China), art. 10.
90. Directive on Electrical and Electronic Equipment (WEEE), art. 2.
91. Regulation on the Administration of the Recovery and Disposal of Waste Electrical and Electronic Products, art. 8.
92. Directive on Electrical and Electronic Equipment (WEEE), art. 5.
Directive’s broader scope and more explicit informational requirements go further toward reducing the amount of e-waste that is improperly disposed, a vitally important component of a successful EPR law. Moreover, the WEEE Directive’s mandate that producers recover their products is more in line with the theory of EPR. Therefore, while the WEEE Directive allows producers to form group recovery operations—obscuring the actual costs of recovery—its mandates get closer to establishing a true electronics EPR. Given the extensive recovery requirements in the WEEE Directive, it is no surprise that its Member States have largely met the recovery goals. As a result of its success, in 2012, the EU increased collection targets to require Member States to collect a higher percentage of e-waste.93

B. Financial Responsibility

Clear financing responsibility is critical to a successful electronics EPR law. If an EPR law does not compel producers to pay the full price for the recovery, collection, and disposal of their products, the EPR law will be less effective at incentivizing product redesign. Thus, in analyzing the financial responsibility provisions of the WEEE Directive and China WEEE, it is important to consider whether and to what extent the laws internalize the costs of end-of-life recovery.

1. WEEE Directive

Article 12 and Article 13 contain the WEEE Directive’s financing requirements. Article 12 outlines financing for e-waste from private households and Article 13 provides for the financing of e-waste from sources other than private households. Article 12 states that “Member States shall ensure that producers provide at least for the financing of the collection, treatment, recovery and environmentally sound disposal of WEEE from private households.”94 Under the Directive, Member States must “ensure that each producer provides a guarantee when placing a product on the market showing that the management of all [e-waste] will be

Financing of e-waste from users other than private households must also be borne by the producers.96

2. China WEEE

The funding requirement in China WEEE is listed in Article 7. It provides that:

The state shall establish a fund for the disposal of waste electrical and electronic products for the expense for recovering and disposing of waste electrical and electronic products. The producers of electrical and electronic products, the consignees of imported electrical and electronic products and their agents shall, according to the relevant provisions, perform obligation of payment to the fund for the disposal of waste electrical and electronic products.97

3. Comparison

The WEEE Directive’s financing provisions are more thorough than China WEEE’s. The Directive’s clear mandate that producers be capable of financing the collection, treatment, recovery, and environmentally sound disposal of e-waste before placing products on the market ensures that electronics producers think about cost of recovery at the design stage, and makes it more likely that funds will be available when the electronics become obsolete.98 Further, by requiring that individual producers be financially responsible for their own products, the WEEE Directive guarantees that producers receive the feedback necessary to redesign products to reduce costs.99 Thus, the WEEE Directive’s financing provision forces producers to internalize the costs associated with placing electronics on the market.

China WEEE does a poor job of forcing producers to internalize costs, and therefore, falls short on one of the most important components of an EPR law. Because it establishes a fund instead of forcing producers to pay

95. Id. ¶ 3.
96. Id. art. 13 ¶ 1.
97. Regulation on the Administration of the Recovery and Disposal of Waste Electrical and Electronic Products (China), art. 7.
for their products, China WEEE does nothing to provide producers with individual feedback. By failing to provide producers with individual feedback, China WEEE does nothing to incentivize producers to develop products for ease of end-of-life recovery. China WEEE’s failure to create producer incentives cannot be overstated because an EPR law’s success or failure depends largely on its ability to incentivize design change. But even if the fund did provide feedback and incentivize product redesign, the efficacy of a state-controlled fund is likely to be undermined by corruption. Thus, on the whole, China WEEE’s funding requirement is inadequate for the purpose of the law.

C. Oversight of Recyclers

Oversight of recyclers is imperative. Without proper oversight, recyclers will dispose of their e-waste in the cheapest possible manner, which usually means sending e-waste to places like Guiyu. Proper oversight is also important to ensure that the recyclers use environmentally sound techniques. Effective EPR laws must (1) have strong permitting requirements that ensure recyclers use best available technology and (2) have strong oversight provisions to prevent recyclers from shipping e-waste to workshops in India, China, and the rest of the developing world.

1. WEEE Directive

Member States must “ensure that all separately collected [e-waste] undergoes proper treatment.” Proper treatment must include the “removal of all fluids and a selective treatment in accordance with Annex VII.” Annex VII contains a detailed list of mixtures and components that must be removed from any e-waste separated from the municipal waste stream. Any entity that treats e-waste must obtain a permit in compliance with Article 23. In addition to other conditions, permits may only be issued to entities capable of meeting the requirements outlined in Annex VII. Article 23 requires Member States to carry out “appropriate inspections and monitoring to verify the proper implementation of the WEEE Directive.” Inspections must include “the operations at treatment facilities.” The cost of such inspections may be charged to producers.

2. China WEEE

China WEEE requires recyclers to:

[O]btain the qualification for disposing of waste electrical and electronic products according to this Regulation; if it fails to obtain the qualification for disposal, it shall deliver the recovered waste electrical and electronic products to a disposing enterprise with the qualification for disposing of waste electrical and electronic products for disposal.

According to Article 23, disposing enterprises must:

(1) [h]av[e] sound facilities for the disposal of waste electrical and electronic products;

(2) [h]av[e] a plan for the proper use or disposal of waste electrical and electronic products which cannot be fully disposed of;

---

103. Directive on Electrical and Electronic Equipment (WEEE), art. 8 ¶ 1.
104. Id. ¶ 2.
105. Id. annex VII.
106. Id. art. 9, ¶ 1 at 47 (referring to article 23 of Directive 2008/98/EC).
107. Id. art. 8 ¶ 3.
108. Id. art. 23 ¶ 1.
109. Id. ¶ 1(c).
110. Id. ¶ 3.
111. Regulation on the Administration of the Recovery and Disposal of Waste Electrical and Electronic Products (China), art. 12.
(3) [h]a[v][e] the sorting, packing and other equipment appropriate for the waste electrical and electronic products to be disposed of; and

(4) [h]a[v][e] the relevant technical professionals on safety, quality and environmental protection.112

Recyclers must also “meet the relevant requirements of the state for the comprehensive resource utilization, environmental protection, labor safety and protection of human health.”113 Recyclers are not allowed to “dispose of waste electrical and electronic products by technologies and processes which have been expressly eliminated by the state.”114

Entities that dispose of electronic waste must “establish a daily environment monitoring system for the disposal of waste electrical and electronic products.”115 These entities must also:

[E]stablish an information management system for data on waste electrical and electronic products, and report the basic data and relevant information on the disposal of waste electrical and electronic products to the competent department of environmental protection of the people’s government of a districted city where it is located. The basic data on the disposal of waste electrical and electronic products shall be kept for a period of not less than three years.116

3. Comparison

China WEEE provides for little oversight of recyclers. Moreover, China WEEE’s qualifications for recyclers are subjective and undefined, leaving recyclers without guidance and the government without objective criteria with which to judge recyclers. Finally, Article 17 seems to impose a self-reporting requirement in place of government inspections. Thus, there seems to be no real mechanism in China WEEE with which to oversee how e-waste is recycled.

In contrast, the WEEE Directive’s permitting requirements are outlined in detail in Annex VII. Prior to receiving a permit, recyclers must complete a variety of tasks to a specified standard. The WEEE Directive requires

112. Id. art. 23.
113. Id. art. 15.
114. Id.
115. Id. art. 16.
116. Id. art. 17.
Member States to inspect recyclers to verify compliance. These requirements ensure that producers pay the full cost of dismantling products in an environmentally responsible manner.

D. Enforcement

Strong enforcement provisions are important for obvious reasons. Without adequate enforcement measures, recyclers and producers will not comply with the law, and the goals of EPR will not be achieved. A strong enforcement provision must set penalties high enough to make noncompliance more costly than compliance.

1. WEEE Directive

The WEEE Directive requires Member States to penalize violations of the national laws adopted pursuant to the Directive.\(^{117}\) “The penalties provided for must be effective, proportionate and dissuasive.”\(^{118}\) Member States have established heavy penalties for violations. In Germany, are as high as 50,000 Euros per violation; in Italy, up to 100,000 Euros; in Spain, up to 1.2 million Euros; and in Ireland, up to fifteen million Euros and imprisonment up to ten years.\(^{119}\)

2. China WEEE

Chapter IV of China WEE covers Legal Liabilities. Article 27 imposes a 50,000 yuan fine on producers for the failure to “state such information as content of toxic or hazardous substances and prompts on recovery and disposal on the produced or imported electrical and electronic products or in the product instructions according to relevant provisions.”\(^{120}\) Article 28 provides that the Government can close businesses, “confiscate illegal gains, and impose a fine of not less than 50,000 yuan but not more than 500,000 yuan” for improper disposal of electronic waste.\(^{121}\) Article 31 states that:

\(^{117}\) Directive on Electrical and Electronic Equipment (WEEE), art. 22.
\(^{118}\) Id.
\(^{120}\) Regulation on the Administration of the Recovery and Disposal of Waste Electrical and Electronic Products (China), art. 27.
\(^{121}\) Id. art. 28.
Where, in violation of this Regulation, a disposing enterprise fails to establish an information management system for data on waste electrical and electronic products, fails to report the basic data and relevant information according to the relevant provisions, reports false basic data or relevant information, or fails to keep the basic data according to the prescribed period, the competent department of environmental protection of the people’s government of a districited city where it is located shall order it to correct within a prescribed time limit, and may impose a fine of not more than 50,000 yuan on it.\textsuperscript{122}

Article 32 imposes the same fine on “disposing enterprises” that either “fail[] to establish a daily environment monitoring system or fails to carry out daily environment monitoring.”\textsuperscript{123}

3. Comparison

China WEEE’s penalty provisions are too low to dissuade producers from violating the law. Converted to dollars, the 50,000 to 500,000 yuan penalties range from $8,093.90 to $80,939.00.\textsuperscript{124} In 2009, total sales revenue for electronic products sold in China exceeded 5.1305 trillion yuan, or $751 billion.\textsuperscript{125} Given the sales revenue, it is unlikely that these fines are high enough to dissuade producers from violating the law because compliance is more costly than the penalties stemming from noncompliance. But beyond the relatively small penalty for noncompliance, enforcement of China WEEE runs into the same problem that plagues enforcement of all environmental laws in China: the difficulty of balancing economic growth and environmental protection.

In contrast, the WEEE Directive merely provides that penalties be of sufficient amount to be “effective, proportionate, and dissuasive.”\textsuperscript{126} From a review of the various Member States’ penalty provisions, it seems that Member States have taken this requirement seriously. Member States have

\begin{itemize}
\item \textsuperscript{122} Id. art. 31.
\item \textsuperscript{123} Id. art. 32.
\item \textsuperscript{125} BROOKS ET AL., supra note 13, at 3.
\item \textsuperscript{126} Directive on Electrical and Electronic Equipment (WEEE), art. 22.
\end{itemize}
set penalties high enough to make noncompliance prohibitively expensive, and have fined producers for failing to implement laws.\textsuperscript{127}

IV. RECOMMENDATIONS

There is little information available on the success of China WEEE, but comparing its key provisions with those of the WEEE Directive, it seems clear that, as it stands now, the law will not create true extended producer responsibility. To extend producer responsibility, EPR laws must, at minimum, have four elements: (1) strong recovery requirements; (2) meaningful financial responsibility; (3) substantial oversight of recyclers; and (4) robust enforcement provisions. China WEEE’s recovery requirements are not as robust as the WEEE Directive’s; the fund China WEEE establishes does not create meaningful financial responsibility; China WEEE does not require oversight of recyclers; and the law’s penalty provisions are too low to encourage compliance.

A. Stronger Recovery Requirement

To effectuate true EPR, China WEEE must have a stronger recovery requirement. In the context of e-waste, EPR laws must cover a broad range of products, must prevent waste from entering the municipal waste stream, and must obligate producer recovery.

China WEEE’s recovery requirements are failing. The law applies to a limited range of products, does little to prevent e-waste from entering the waste stream, and merely encourages producers to recover their obsolete electronics. China WEEE’s recovery requirements must be amended to benefit from extending producer responsibility. In amending the recovery requirements, Chinese lawmakers would do well to consider the WEEE Directive’s collection and informational requirements, which do much more to obligate producers to recover their products and increase collection rates.

B. Financial Responsibility

China WEEE’s financial responsibility provisions are inadequate and fall short of creating meaningful EPR. China WEEE obligates producers to

\textsuperscript{127} See Leo King, Plymouth City Council Fined £12,000 for WEEE Breach, COMPUTERWORLD UK (June 28, 2010), http://www.computerworlduk.com/news/public-sector/20869/plymouth-city-council-fined-12000-for-weee-breach [http://perma.cc/9GGU-9DKG] (discussing that in 2010, the United Kingdom fined Plymouth City Council £8,000 for allowing unauthorized recyclers to remove and sell computers from its waste plants without first checking that the companies were certified recyclers).
pay into a fund rather than pay the cost of recovering and recycling their products.128 Because fund payments do not correspond to the cost of end-of-life recovery, they do not provide producers with the feedback necessary to incentivize product redesign. Product redesign will only occur when producers must pay the full price of recycling their product. Because one of the primary goals of EPR is to encourage product redesign, China WEEE’s financial responsibility provisions fall short.

Chinese lawmakers should examine the WEEE Directive’s financial responsibility provisions, which go further toward incentivizing product redesign. While no study confirms the WEEE Directive’s impact on product redesign, individual financial responsibility should, in theory, encourage producers to redesign products for ease of end-of-life recovery.

C. Oversight of Recyclers

China WEEE must provide for more stringent oversight of recyclers. At present, China WEEE’s permitting requirements are subjective and undefined, leaving recyclers and the government with little guidance.129 In addition, China WEEE does not require inspections of recycling facilities.130 By failing to provide clear permitting and inspection requirements, China WEEE does nothing to force producers to responsibly recycle their electronics. If the Chinese government is concerned about the toxins released through the improper recycling of e-waste, China WEEE must be amended to provide meaningful permitting and inspection requirements. The WEEE Directive provides extensive permitting requirements in Annex VII.131 Chinese lawmakers should consider these requirements before updating China WEEE’s permitting system. To ensure permitting requirements are met, China WEEE must inspect recycling facilities instead of relying on self-reporting. Although the WEEE Directive neither imposes a frequency or thoroughness requirement on inspections, China WEEE could be more effective by requiring routine inspections and delineating exactly what the inspections must cover.132

129. Id.
130. Id.
131. Directive on Electrical and Electronic Equipment (WEEE), annex VII.
132. Id. art. 23.
D. Enforcement

Setting penalties for violations is difficult. To be effective, a penalty must reach a level where compliance is cheaper than the risk of violation. It seems clear that the penalties imposed under China WEEE are too low to properly discourage noncompliance; however, it is not clear where penalties should be set. The WEEE Directive deals with this problem by requiring Member States to simply set penalties that are “effective, proportionate, and dissuasive.” Member States have imposed substantial penalties on violators because if the EU determined a Member State’s penalty provisions were too low, it would take the Member State to court for failing to properly implement the WEEE Directive. While allowing individual Member States to set penalties is a unique and clever way to get around the difficult issue of setting appropriate penalties, it is not clear that a similar provision is warranted or advisable to deal with China’s electronics producers. Whether giving local governments the authority to set effective, proportionate, and deterrent penalties is reasonable would require an analysis of both the cost of compliance in different regions of China, and the relative ease with which the central government could oversee the local governments. Such analyses are outside the scope of this Article; however, it remains clear that the various penalties imposed by China WEEE are too low to encourage producers to comply with its provisions.

CONCLUSION

This Article sought to compare China WEEE with the purposes of EPR and its model, the WEEE Directive to determine whether China WEEE could fulfill the goals of EPR. This Article identified four key elements necessary to the successful implementation of EPR laws and compared the provisions of China WEEE with the provisions of the WEEE Directive that implement those four elements. Comparison of these provisions makes clear that China WEEE is lacking in all elements necessary for successful implementation of EPR. The recovery requirements are too weak; the financing responsibilities are too indirect; the oversight of recyclers is too little; and the penalty provisions are too low for China WEEE to effectuate extended producer responsibility.

To improve recovery requirements, Chinese lawmakers should broaden the scope of China WEEE, obligate producer recovery, and mandate strong information requirements so that producers internalize the deleterious

133. Id. annex VII.
externalities they produce. For China WEEE to create true EPR, the law must be amended to place full financial responsibility for recovery and recycling on individual producers instead of obligating producers to pay into a state-administered fund. If China is serious about reducing the improper recycling of electronics, China WEEE must incorporate explicit and clear permitting requirements for recycling companies, as well as require routine and thorough inspections of recycling facilities. Finally, to deter noncompliance, China WEEE must make noncompliance expensive by increasing penalties and ensuring violators are quickly and appropriately punished. If China is serious about extending the responsibility of electronics producers, China WEEE must be amended.
WHO CERTIFIES THE CERTIFIERS?*

By Wynn Heh†

Introduction.................................................................................................................. 689

I. Trademarks Under the Lanham Act and Common Law......................... 692
   A. Trademarks ................................................................................................. 692
   B. Certification Marks ............................................................................. 696
   C. Interrelated and Conflated Terms .................................................... 700

II. The Public Path to a Certifiably Greener Future ................................. 702

III. Government as Market Participant and Influencer ............................. 704

IV. The Building Industry: A Concrete Example .................................... 707
   A. Energy Star ......................................................................................... 709
   B. Leadership in Energy and Environmental Design ....................... 711

V. Proposed Reforms and Actions ............................................................... 712
   A. National Uniformity ............................................................................ 712
   B. Trademark Law .................................................................................. 713
      1. Greater Scrutiny of Standards During Registration ............... 713
      2. Creation of a Federally-Protected Certification Symbol .......... 713
      3. Broader Standing for Citizens’ and Competitors’ Suits .......... 714

Conclusion ........................................................................................................... 715

* “Quis Certificabit Ipsos Certificatores?” With apologies to Juvenal. See D. Junii
Juvencis, Satura VI, in Saturarum Libri V. 325 (Mit Erklärenden Anmerkungen von Ludwig
custodes?” (meaning “But who will guard the guards themselves?” or “But who watches the
watchmen?” referring to the impossibility of enforcing moral behavior when the enforcers themselves
are corruptible).

† LL.M., Lewis & Clark Law School, Environmental and Natural Resources Law, 2015;
Biology, University of New South Wales & Victoria University of Wellington, 2008. The author is
grateful to Professor Lydia Loren for her guidance.
INTRODUCTION

Our consumption patterns must become more sustainable. The desire to preserve resources for future generations is not limited to modern environmentalists. It is exhorted in the Bible, by great philosophers, by our founding fathers, and beyond. The seminal Brundlandt Report defines “sustainability” as “meet[ing] the needs of the present without compromising the ability of future generations to meet their own needs.” Defined in this manner, it is more than a yuppie luxury: it is the only path forward where future generations can thrive.

In response to global changes, society is willing to move towards more sustainable consumption, and people are increasingly turning to ethical consumerism. Consumers have indicated a willingness to pay a premium for goods and services that are less harmful to the environment, and the market is happy to oblige. Despite its potential, consumer choice has no effect—or even a deleterious effect—if the goods chosen are not as environmentally friendly as claimed. Attaining sustainable consumption patterns is, in part, a consumer protection issue: when marketers mislead consumers on the environmentally friendly attributes of the goods they

1. “The land is mine and you are but aliens and my tenants. Throughout the country that you hold as a possession, you must provide for the redemption of the land.” Leviticus 25: 23–24. “As for you, my flock . . . Is it not enough for you to feed on good pasture? Must you also trample the rest of your pasture with your feet? Is it not enough for you to drink clear water? Must you also muddy the rest with your feet?” Ezekiel 34: 17–18. There is also a devotional bible with a specific emphasis on environmentalism, highlighting environmental teachings with green text. The Green Bible I-15 (HarperCollins, 2011).

2. JOHN LOCKE, TWO TREATISES OF GOVERNMENT 212–13 (Whitmore & Fenn 1821) (1690).

3. “For if he could, he might during his own life, eat up the usufruct of the lands for several generations to come, and then the lands would belong to the dead, and not to the living, which would be reverse of our principle.” Letter from Thomas Jefferson to James Madison (Sept. 6, 1789), available at http://press-pubs.uchicago.edu/founders/documents/v1ch2s23.html [http://perma.cc/TL2F-BB65].


5. For the purposes of this article, a rigorous definition is unnecessary. “Sustainability” and “sustainable” will be treated as a direction, not as a destination: no goods are sustainable, some are merely more sustainable than others. Hannah Judge Brown, Sustainability a Journey, Not a Destination, THE GUARDIAN (Sept. 29, 2009), available at http://www.theguardian.com/sustainability/blog/sustainability-journey-destination [http://perma.cc/77WB-8FXF].


purchase, there is reduced incentive for truthful advertising and the consumers do not receive the benefit they intended to purchase. With the increased profitability of green goods there has been an increase in deceptive environmental marketing, dubbed “greenwashing.”

Though greenwashing pervades many trademarks, marketing tactics that falsely suggest a third party has certified the good are a potent problem. When false environmental claims mislead consumers into buying greenwashed goods, the money does not go to the honest producers accurately advertising their products, and it allows the less scrupulous advertisers to abscond with the consumers’ money. In a market where informational imbalance is pervasive, especially where consumers are selecting products based on qualities not readily observable—such as environmental claims—there is incentive for marketers to overstate benefits.

Trademark law is especially pertinent to environmental marketing because such marketing tactics often use trademarks to catch the green consumer’s attention. Certification marks, a specific type of trademark, signal that the marked goods meet certain standards. Certification marks can help consumers identify sustainable goods and help marketers attract more consumer attention towards goods that may be priced higher but are more sustainable. Certification marks play an important role in greening the market by aiding consumers in finding green goods. Consumers that purchase goods bearing certification marks are promoting more environmentally friendly goods, and the purchases can more strongly incentivize producers to certify their goods without rewarding fraudulent marketers. So long as the goods comply with the purported certification standards, this shifts the market towards more sustainable goods.

Stronger, clearer certification law will better ensure that consumers who choose environmentally friendly products are getting the benefits

9. infra notes 106–108 (discussing the increase in false endorsements).
10. See Ariel Katz, Beyond Search Costs: The Linguistic and Trust Functions of Trademarks, 2010 BYU L. REV. 1555, 1561 (2010) (explaining that “[w]hen various attributes of goods that consumers care about are known to the sellers but cannot be observed or verified by consumers, sellers have an incentive to mischaracterize their goods as carrying such attributes”). This drives the “market for lemons” phenomenon where some sellers mischaracterize their goods, conditioning customers to assume the worst across all sellers, making it difficult for honest sellers to compete, forcing them to withdraw, thus creating a cycle that continues lowering average quality. Id. at 1061–62.
advertised and accurate information from the marks. Though certification law is laid out in the U.S. Code, it is not well-settled, and the statutory language is sparse. It has been “viewed as an inconsequential backwater of trademark law.”13 Rather than treating it as the redheaded stepchild of trademarks, scholars should treat certification marks as an integral component of the law of unfair competition and should be better leveraged to protect consumers.14 Complicating the issue, however, is the imprecision of the green lexicon: a “certification mark” is a term of art defined by United States federal statute,15 but all too often the term is used in a general, non-term-of-art sense, often in conjunction with certification programs.16 Although there is a wealth of literature on deceptive environmental marketing—much of it involving environmental certification programs—few authors address the statutory law governing certification marks.17 Due to the growing popularity of certification marks and their potential to alter consumption and production patterns for the better, the laws governing certification marks must be clarified. A significant portion of environmental marketing uses certification as a tool for attracting more consumers; therefore laws governing environmental marketing are also necessarily an integral part of clarifying certification mark law.

14. Id. at 2317.
16. Even professionals may confuse the term: a trademark attorney described a lawsuit against SC Johnson as a “case concern[ing] SC Johnson’s GREENLIST green seal (legally known as a ‘certification mark.’)” Lara Pearson, SC Johnson Greenlist Cases Settle—GREENLIST No Longer to be Used on WINDEX Products, BRAND GEEK (July 12, 2011), http://brandgeek.net/2011/07/12/sc-johnson-greenlist-cases-settle-greenlist-longer-windex-products [http://perma.cc/JS7U-UD26]. SC Johnson, however, did not register any of its GREENLIST marks as certification marks. GREENLIST, Registration Nos. 3353719 (service mark), 3518048 (trademark), 3522370 (trademark), 3729963 (trademark), and 3951078 (trademark). That GREENLIST was not a certification mark was, in fact, a critical aspect of the lawsuit: “SC Johnson conveys to Plaintiff and other consumers that Windex has been subjected to a neutral, third party’s testing regime . . . [but] these representations by Defendant are false. . . . [T]he Greenlist ‘seal of approval’ is . . . the work of Defendant SC Johnson itself.” Complaint at ¶¶ 6–7, Koh v. S.C. Johnson & Son, Inc., No. 09-cv-00927-HRL (N.D. Cal. Mar. 2, 2009) (emphasis in original) [hereinafter Complaint]. A more detailed explanation of trademarks and certifications marks is infra at Part I.A, I.B.
This article defines and examines the general principles of trademark and certification mark law. From that foundation, this article delves into the messy lexicon surrounding environmental marketing. Next, Part II discusses traditional governmental mechanisms used to control against misleading environmental marketing in general and certification marks in particular. This article then identifies, in Part III, a public–private partnership utilizing voluntary certification programs as the most effective means of achieving change. Part IV examines the buildings sector as a concrete example of how such partnerships work. Finally, this article proposes several reforms to create or clarify existing legislation and regulations governing environmental marketing and certification marks, and to develop extra-governmental mechanisms that can best advance a public policy of sustainability.

I. TRADEMARKS UNDER THE LANHAM ACT AND COMMON LAW

A. Trademarks

The Lanham Act is the primary federal law governing trademarks. A trademark can be any “word, name, symbol, or device, or any combination thereof” that is used in commerce to “identify and distinguish” the user’s goods or services from those of another. The term “trademark” encompasses marks used on goods, or with services, to signal source, but “service mark” is a specialized name for the latter. The Lanham Act is careful to maintain the difference in vocabulary by limiting its use of the word “trademark” to marks on goods and using “service mark” to describe marks for services. Because the substantive trademark law governing trademarks and service marks are the same, “trademark” is often used to refer to both.

Trademarks, and trademark law, protect both consumers and producers. From the consumers’ end, trademarks identify the source of

19. Id. § 45.
21. Id. cmt. f.
22. Id. This is analogous to “all squares are rectangles, but not all rectangles are squares.” Registrants often confuse trademarks and service marks. Adjudicators acknowledge the frequent confusion, largely choosing to treat the difference as clerical. The registration forms for both are identical. Index of All TEAS Forms, U.S. PAT. & TRADEMARK OFFICE, http://www.uspto.gov/trademarks-application-process/filing-online/index-all-teas-forms [http://perma.cc/9PY3-RPGA] (last visited Feb. 21, 2015).
the goods. The consumers know that marked goods come from the same source and are of the same quality as other goods with the same mark, and that the mark owner’s reputation is behind those goods. This “reduce[s] the buyer’s cost of collecting information about products by narrowing the scope of information into brand segments rather than hav[ing] the buyer start anew with each single product.” On its own, a mark is largely without value: it is the underlying goodwill—the brand’s reputation—associated with the mark that creates the value. By “fix[ing] responsibility,” “trademarks create an incentive [for mark owners] to keep up a good reputation.” For mark owners, trademark law provides them with power to protect that reputation. Mark owners do not have to register with the U.S. Patent and Trademark Office (“USPTO”) in order to receive protection against infringement: both state and common law may also govern trademarks. Should a registered mark be cancelled, it loses federal statutory protection but may retain common law protection.

The Lanham Act prohibits anyone from using a trademark in commerce without consent of the mark owner. Such use constitutes infringement, and a mark owner may bring a legal action against the infringer. In exchange for legal protection for the mark, a mark owner has a duty to ensure the quality of the goods bearing the mark. Part of the underlying premise for trademarks is that a marked good is only genuine when it is subject to the mark owner’s regular quality control. If a brand is known

24.  Id. § 2:4.
25.  Id. § 3:10.
26.  Id. § 2:4.
27.  Id. § 2:5.
28.  Id. § 2:15 (noting that a trademark “has no existence apart from the good will of the product or service it symbolizes[,]” and that the two are “inseparable”).
29.  Id. § 2:4.
30.  Id. § 2:14 (broadly discussing the property rights in a trademark, including using the Customs Service to prevent the import of infringing foreign goods).
32.  3 MCCARTHY, supra note 23, § 18:38.
33.  Id. § 20:68 (“[C]ancellation of a registered mark only denies its owner the important procedural and substantive benefits that flow from registration” and even a plaintiff whose federal registration is cancelled may “prevail[] to either prove infringement or deny another a registration, relying on common-law trademark rights.”) (citations omitted).
34.  Lanham Act § 32(1) (protection for federally registered marks). Protection for unregistered, common law marks comes from § 43(a), which generally prohibits “[f]alse designations of origin, false descriptions, and dilution[,]”
36.  3 MCCARTHY, supra note 23, § 18:48.
37.  Id.
for low-cost, low-quality goods, that reputation alone is not a failure to control quality. The issue arises when a brand is known for high-quality goods, but the trademark is used on inferior goods. When the mark owner fails to control the licensing of the mark and allows “the licensee [to] place the mark on any quality or type of goods or services,” this failure amounts to “naked licensing.” 38 When the mark misrepresents the quality of the good by trading upon a consumer’s expectation of the normally-higher-quality good, it is “inherently deceptive” 39 and amounts to fraud. 40 Naked licensing may result in reduction in protection or outright cancellation of the mark because it has “los[ts] its significance as a mark.” 41 “Abandonment” refers to non-use of a mark, but it has also been applied to any situation where the mark owner has lost property rights in the mark. 42 Naked licensing, therefore, is a form of trademark abandonment, but it does not result in the same absolute loss of rights that results if the mark owner ceased using—i.e., abandoned—the mark altogether. 43 An accusation of naked licensing is most often used as a shield by a party accused of infringement. 44 Rather than arguing that the accused action is not infringement, the defendant argues that the mark owner had licensed the mark without adequate quality control and therefore had given up rights to the mark. 45

Trademark law also encompasses more than just trademarks, service marks, and certification marks. In addition to protecting mark owners against infringers and prohibiting mark owners from licensing marks in a fraudulent manner—e.g., naked licensing—the Lanham Act also provides for civil actions against false advertising. Section 43(a) prohibits “false or misleading” descriptions and representations in commerce, which encompasses common law trademarks and other forms of communication. 46 In spite of the broad language—“any person” who can show likely harm

38. Id.
40. 3 McCarthy, supra note 23, § 18:48 (citing Societe Comptoir de L’Industrie Cotonniere Etablissements Boussac v. Alexander’s Dep’t Stores, Inc., 299 F.2d 33, 35 (2d Cir. 1962)).
42. 3 McCarthy, supra note 23, § 17:5.
44. Id. § 9:42 n.4.
45. Id. § 9:42 nn.1, 10–11.
can bring the action section 43(a) standing, in reality, has been narrower. Since the USPTO is primarily a gatekeeper, not tasked with policing trademark use once a mark is registered, only competitors and consumers are likely plaintiffs. Until recently, several Circuits categorically prohibited indirect competitors from suing under the Lanham Act, but the Supreme Court ruling in *Lexmark v. Static Control* has tentatively extended standing to indirect competitors. Despite this expansion of standing, consumer suits are unlikely for myriad reasons. First, most consumers cannot justify the expenses of pursuing litigation over a single instance of deception. Second, class actions are possible but are likely to fail the “commonality” or “numerosity” prongs necessary for class certification. The case-by-case nature of consumer deception usually means that individual issues predominate over common questions of law or fact, rendering the class action inappropriate. Potential class action plaintiffs may also have difficulty establishing that a sufficient number of consumers have suffered injury due to the misuse of a trademark. However, courts have denied standing to consumers, subordinating direct consumer protection to commercial competitive interests.

48. *Tushnet, supra* note 46, at 1375–76 (“[C]ourts have never given [section 43(a)] a literal reading. At first, courts simply excluded consumers from the class the law protected, allowing only competitors to sue.”) (citation omitted).
50. 15 U.S.C. § 1064 (2012) (the cancellation procedures in Section 14 of the Lanham Act are limited to the FTC and “any person who believes that he is or will be damaged” by the mark).
52. 1 *McCarthy,* supra note 23, § 2:33.
54. *Id.* at 246.
55. *FED. R. CIV. P.* 23(b)(3) (requiring that “questions of law or fact common to class members predominate over any questions affecting only individual members”).
57. *Tushnet, supra* note 46, at 1374 (stating that courts generally dismiss cases of consumers seeking to sue under section 43(a)).
58. *Wojciechowski,* supra note 53, at 215–16 (denouncing court decisions that have read “any person” to mean “only business competitors”); see also 5 *McCarthy,* supra note 23, at § 27:39 (summarizing the various circuits’ treatment of section 43(a) standing).
B. Certification Marks

In contrast to a regular trademark, “[a] certification mark is a special creature created for a purpose uniquely different from that of an ordinary service mark or trademark.” Certification marks do not identify the source of goods but instead represent to a consumer that the goods meet certification standards chosen by the certification mark owner. Serving as shorthand for an endorsement, certification marks do not convey detailed or technical information directly; consumers must trust the certifying parties. A certification mark owner must file an additional description of the certification standards with the USPTO. This requirement, however, is not rigorous, and the USPTO does not investigate the substance of the filed certification standards.

Not only are certification marks subject to cancellation under any of the provisions that apply to trademarks, there are four additional grounds for cancellation that apply only to certification marks. Under section 14(5)(A) of the Lanham Act, if the certification mark owner “does not control, or is not able legitimately to exercise control over” the mark, this loss of control may be grounds for cancellation. This is a codified prohibition against naked licensing. Unlike the common law doctrine of naked licensing as applied to regular trademarks, however, the statute does not appear to allow for a partial reduction of protection. This potentially harsh result may arise from the perceived need to hold certification marks to a higher standard, since these marks affirmatively signify that the marked good meets the

60. In addition to this type of certification mark, “geographic indicators” may certify that the marked goods are from a specific area. T.M.E.P. § 1306.02 (2007). Collective trademarks are marks that certify that members of a certain group performed the labor and are sometimes considered a type of certification mark. T.M.E.P. § 1306.9(a) (distinguishing between certification marks and collective marks). Although certification marks serve a different function, they are held to the same “standards generally applicable to trademarks and service marks . . . such as descriptiveness, disclaimers, and likelihood of confusion.” T.M.E.P. § 1306.06(a).
61. Chon, supra note 13, at 2318.
62. 37 C.F.R. § 2.45(b) (2011); T.M.E.P. § 1306.06(g)(ii); see also Terry E. Holtzman, Tips from the Trademark Examining Operation, 81 TRADEMARK REP. 180, 192 (1991) (summarizing what time during the process an applicant must submit the standards for certification when filing for a certification mark registration).
63. Chon, supra note 13, at 2335, 2337 (discussing the lack of oversight and accountability in the standard-filing process with the USPTO).
64. 15 U.S.C. § 1064 (“[A]ny person who believes that he is or will be damaged” by the prohibited actions may petition for cancellation of any federally registered trademark).
65. Id. § 1064(5).
67. See supra Part I.A (discussing naked licensing as it affects trademarks in general).
certification criteria. A certification mark owner must exercise sufficient control over the mark to prevent misleading the public. The Trademark Trial and Appeal Board, as well as courts, have emphasized the “affirmative obligation on the certification mark owner to monitor the activities of those who use the mark,” but there is no statutory definition of what “control” requires. The “requirement cannot mean absolute control because it would be impracticable, if not impossible, to satisfy[;]” therefore the requisite amount of control must be determined on a case-by-case basis. A challenger must “demonstrate by a preponderance of the evidence” that a certification mark owner has failed to exercise adequate or reasonable control over use of the mark in light of the “totality of the facts and circumstances.” This is a heavy burden, and it appears that no cancellation has resulted from section 14(5)(A).

Section 14(5)(B) prohibits a mark owner from “engag[ing] in the production or marketing of any goods or services to which the certification mark is applied.” Due to the need to maintain a high level of credibility, a mark owner may not use certification marks under the Lanham Act. This reinforces the neutral, third party aspect of certification marks. In the same vein, a registrant cannot skirt the prohibition of section 14(5)(B) by registering a trademark and an identical—or nearly identical—certification mark. If consumers cannot distinguish between the trademark’s source-identifying function and the certification mark’s certifying function, then the marks fail to perform the functions for which they are registered and may be cancelled. Differences that convey to consumers that the marks serve distinct functions—such as “wording denoting certification such as ‘Approved by’, ‘Tested by’, etc.”—may allow both registrations.

Section 14(5)(C) is a corollary to (B), barring use of the certification mark as a trademark or service mark by licensees. Such use does not directly fall under the prohibitions of subsection (B) since the certification mark owner is not the party engaged in misuse of the mark, but (B) and (C) together maintain a usage distinction between certification marks and other trademarks.

68. Cf. Wojciechowski, supra note 53, at 223 (highlighting the importance of protecting the public’s faith by holding deceptive mark users accountable).
69. Midwest Plastic, 906 F.2d at 1572.
70. Id.
71. Id.
72. Id.
73. Id. at 1572–73.
77. Id. at 869.
Section 14(5)(D), like subsections (B) and (C), reinforces the neutral, third party aspect of certification marks: certification mark owners have no discretion as to who can use the mark, so long as the user meets the certification standards.\(^78\) The compulsory nature of certification marks can be contrasted with regular trademarks, where the mark owner has total discretion to license the mark.\(^79\) If a licensee of a certification mark meets the certification criteria but is denied use of the certification mark,\(^80\) the legitimacy of the mark is compromised and the mark may be cancelled. Certification of “certain qualities or characteristics” of the goods, however, should not be confused with general guarantees of the “nature and quality” of the goods: a certification mark owner is responsible for the former whereas a trademark owner is responsible for the latter.\(^81\)

In light of the different functions and uses of certification marks as compared to regular trademarks, the prohibitions of section 14(5) are sensible. Because the certification mark stands for third party verification of a good’s characteristics, consistent and non-discriminatory award of the mark is necessary. Less clear, however, are the ramifications if a certification mark owner permits use of the mark on goods that fail to meet the certification criteria. Although section 14(5)(D) prohibits denying a compliant good the use of a certification mark, nowhere in section 14 does the Lanham Act explicitly address the inverse scenario where a non-compliant good receives a certification mark. Such a scenario appears to fall under the prohibition on section 14(5)(A)—a failure to control the mark—if it falls under section 14. In naked licensing of a trademark, proving a sufficiently egregious loss of control is difficult.\(^82\) Since a certification mark is a type of trademark, it is likely that a similarly high burden of proof would be required for a court to revoke rights to a certification mark.\(^83\)

Another gray area of certification mark law is the legality of using a registered trademark as a certification mark.\(^84\) Though deliberately using a


\(^{79}\) Holtzman, supra note 62, at 183.


\(^{81}\) T.M.E.P. § 1306.09(b); but see supra Part I.A, text accompanying notes 36–41 (discussing the duty of quality control).

\(^{82}\) 3 MCCARTHY, supra note 23, § 18.48 (courts requiring “a high degree of proof be made before . . . all rights in the mark are lost”).

\(^{83}\) Even so, a trademark licensing article notes that “[t]here are no reported cases of liability for failing to hold a licensee to the standards claimed.” Tsan Abrahamson, Practice Pointers on Trademark Licensing, 14 ALI-ABA ESTATE PLANNING COURSE MATERIALS J. 17, 18 (2008), available at http://files.ali-aba.org/thumbs/datatstorage/lacidoirep/forms/CMJ0810-_Abrahamson_thumb.pdf [http://perma.cc/WX7A-KKZF].

\(^{84}\) An unregistered mark functioning entirely as a certification mark is simply a common law certification mark. See infra text accompanying notes 85–88.
trademark in a manner that misleads consumers into believing that a third party has certified the goods would be a violation of general consumer protection laws, it is unclear what happens if the mark owner treats the mark as a certification mark.\footnote{See generally Complaint, supra note 16 (Koh v. SC Johnson & Son, a lawsuit over the use of a trademark by the mark owner in an allegedly misleading manner).} Assuming, however, the trademark owner complies with the fundamental requirements for certification marks, the Lanham Act is silent.\footnote{15 U.S.C. § 1064(5). That is, the mark owner complies with the section 14(5) requirements to control the mark, abstain from “producing or marketing ... any goods or services to which the certification mark is applied,” forbid the use of the mark “for purposes other than to certify,” and certify “any person who maintains the standards or conditions which such mark certifies.” Id.} This would not qualify as naked licensing because the mark owner imposes enough control to ensure that marked goods meet certification standards. On a practical level, consumers would find it hard to distinguish between a trademark and a certification mark, so long as the mark indicates the standards determined by the mark owner. Therefore, principles of consumer protection would not impel cancellation of the trademark.

If, however, the trademark were used in a manner prohibited by section 14(5), what might be the grounds for cancellation? By its terms, section 14(5) applies to marks registered as certification marks only, but allowing a trademark used as a certification mark to skirt these prohibitions would violate the consumer protection principles undergirding trademark law.\footnote{See supra Part I.A (discussing consumer expectations based on a mark owner’s reputation).} A consumer has no reliable way of telling—short of looking it up in the USPTO trademark database—whether a mark is a trademark or a certification mark. A registrant that erroneously filed, and received, a trademark but conducts the licensing of the trademark according to certification mark requirements has created a de facto certification mark.\footnote{Such a use would fit the general definition of “de facto”: “[a]ctual; existing in fact; having effect even though not formally or legally recognized.” BLACK’S LAW DICTIONARY 506 (10th ed. 2009).} If a licensee benefits from the trademark-used-as-certification-mark, then principles of estoppel may apply as well.\footnote{This would fit the general fact pattern underlying estoppel, which acts as “[a] bar that prevents one from asserting a claim or right that contradicts what one has said or done before[.]” Id. at 667.} There are, however, registrants who may knowingly and deliberately file for a trademark to skirt the restrictions of section 14(5).\footnote{See generally John M. Arnone, Game (Not) Over: How a Mark Saved Video Games, 19 J. CONTEMP. LEGAL ISSUES 247, 247–51 (2010) (describing the flood of low-quality video games in the early 1980s and Nintendo’s strategy to selectively endorse games so that consumers could reliably identify the quality of games).} Because the Lanham Act is silent on this
issue, courts will likely look to general consumer protection laws to decide claims on a case-by-case basis.

Common law did not recognize certification marks before the Lanham Act. Since its passage, however, common law certification marks can exist, but unlike general trademarks, the law is far less settled and continues to change. Though most cases recognizing common law certification marks focus on geographical indicators, the language used by the courts draws parallels between certification marks and trademarks without limiting common law protection to geographic certification marks only. Out of several thousand registered certification marks, only a few are federally-owned. Many well-known certification programs, such as the U.S. Department of Agriculture ("USDA") Organics program, have no registered certification marks. Other federal laws, however, back these marks.

C. Interrelated and Conflated Terms

Not all certification processes involve registered marks. The legal terminology of trademark law becomes muddied in the marketplace, especially for environmental marketing. Certification programs are a

91. LOUIS ALTMAN & MALLA POLLACK, CALLMANN ON UNFAIR COMPETITION, TRADEMARKS AND MONOPOLIES § 17A:15 (4th ed. 2014) (declaring that certification marks were "not recognized under pre-Lanham Act common law"); contra Daphne Leeds, Trademarks from the Government Viewpoint, 44 CALIF. L. REV. 489, 492, 497–98 (1956) (noting that, although certification marks were "unregistrable" before the Lanham Act, "[business practices developed these types of marks ... and the courts protected them]").


93. RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 11 cmt. a (1995) (noting that certain aspects of the Lanham Act "have not been explicitly incorporated into the common law").

94. Real Juices, 330 F. Supp. at 430 (finding no "substantive distinction between certification marks and trademarks which would render the case law pertaining to creation of common law trademarks inapplicable to certification marks" and holding "that rights in an unregistered certification mark can be acquired in the same manner as they can in trademarks").


96. Id. The TESS search for federally owned certification marks did not return any marks owned by the USDA, nor any marks regarding organic certification.

97. See, e.g., 7 C.F.R. § 205.311 (2008) (providing for how the USDA Organic seal may be used).

98. Chon, supra note 13, at 2315.
popular way of encouraging sustainable consumption—and capitalizing on it. Often a certification program will have a distinctive symbol—i.e., a mark. In the ordinary sense of the words, these are “certification marks”: these marks represent the certification program. The phrase “certification marks” in an ordinary, not-a-term-of-art, sense encompasses more than the class of certification marks defined by the Lanham Act.99 However, use of either type of mark is subject to consumer protection law.100

The dual purposes of trademark law—to protect consumers and to protect a mark owner’s rights—are largely premised upon anti-fraud and anti-deceit grounds.101 Certification marks, as defined under the Lanham Act, convey to consumers that the goods meet an independent party’s standards.102 This assurance operates as an indicator of approval.103 This amplifies the consumer protection function of trademarks in the case of certification marks. In environmental marketing, ecolabels and eco-certification marks are important ways for marketers to convey that their goods are environmentally preferable.104 Consumers choosing goods on the basis of such certification marks must be able to rely on the veracity of the labels to ensure that they are receiving the bargained-for benefit.

Due to the popularity of ecolabels,105 there has been a corresponding rise in greenwashing, often divided into “seven sins” coined in widely-cited reports by TerraChoice.106 Out of the sins of greenwashing, the sin of

99. Borrowing, again, the squares and rectangles analogy: All Lanham Act Certification Marks are certification marks in the ordinary sense, but not all certification marks in the ordinary sense are Lanham Act Certification Marks. Supra note 22.
100. See infra Part III (discussing the Federal Trade Commission’s role in regulating environmental marketing).
103. Chon, supra note 13, at 2315 (calling certification marks “proverbial stamp[s] of ethical approval”).
106. TERRACHOICE INC., THE SINS OF GREENWASHING (2010), available at http://sinosofgreenwashing.com/index35c6.pdf [http://perma.cc/6ASY-DAKB]. It is important to note that TerraChoice is an environmental marketing firm, and that their reports are aimed at general consumers. The data supporting their analysis and conclusion are not available publicly. It is useful as a tool to teach consumers about greenwashing, but it is not an entirely neutral, third party source of detailed, technical information.
worshipping false labels—falsely representing that a good has been endorsed by a third party—has risen dramatically in recent years, faster than any other sin. This reflects the view by consumers who expect that independent third parties verify ecolabels, but this may not always be the case. Depending on who is drafting the definitions, ecolabels may refer to any label that makes an environmental claim, including one that a company awards itself. Consumers, however, take a dim view of self-certification. Rather than seek independent certification because it is too expensive, or because the goods to be certified would not meet standards, some marketers try to use self-awarded marks in a way that misleads consumers into believing a third party was involved.

II. THE PUBLIC PATH TO A CERTIFIABLY GREENER FUTURE

The issues surrounding greenwashing fall under the mandates of several federal agencies: the Environmental Protection Agency (“EPA”), Federal Trade Commission (“FTC”), USDA, and Food and Drug Administration (“FDA”) may all control various aspects of environmental marketing. The myriad overlapping mandates have resulted in a lack of oversight because neither of the most relevant agencies, the EPA and the FTC, claim full jurisdiction over environmental marketing. The EPA is primarily concerned with environmental protection, not environmental marketing—but regulating the former implicates the latter.

---

107. Id. at 10.
108. Id. at 7, 16.
110. Id. (comparing different definitions of “ecolabel” that differ on whether it must be issued by a third party).
111. TERRACHOICE INC., supra note 106, at 20. The TerraChoice researchers found the variety and ubiquity of clipart and stock art for “certified green” graphics to be “almost comical.”
116. E. Howard Barnett, Green with Envy: The FTC, the EPA, the States, and the Regulation of Environmental Marketing, 1 ENVTL. L. 491, 500–03 (1995). Though Congress considered a bill to give the EPA authority to regulate against deceptive environmental claims, the bill did not pass. Kimberly C. Cavanagh, It’s a Lorax Kind of Market! But Is It a Sneetches Kind of Solution?: A Critical
The FTC, however, has been the primary agency in regulating environmental marketing through its mandate to protect consumers. Under the Federal Trade Commission Act, “unfair or deceptive acts or practices in or affecting commerce” are illegal, and the FTC has authority to prosecute such behavior. The FTC focuses on the consumers’ perception of environmental claims, not on the environmental claims themselves. In 2012, the FTC issued a newly revised set of Guides for the Use of Environmental Marketing Claims (“Green Guides” or “Guides”). The Guides are the FTC’s interpretations of how section 5 of the FTC Act applies to environmental marketing claims, but they are not legally binding.

The earlier Green Guides did not specifically address the use of certification, seals of approval, nor any other forms of endorsement. In the 2012 iteration of the Green Guides, the FTC added section 260.6 to address certifications and seals of approval directly. The language is general, comprising five short paragraphs and eight sample scenarios. Although section 260.6 forbids misrepresenting that a good has been subject to independent verification, the Green Guides allow companies to use marks on their own goods if there is sufficient notice in the advertisement indicating that it is a self-certification. As the EPA noted, and the FTC agreed, “the FTC is not in a position to specify the specific process for, or content of, programs that award seals and certifications’ and, thus, the Commission should review certifications on a case-by-case basis.

---

121. See FED. TRADE COMM’N, supra note 119, at 75 (acknowledging that the 1998 Guides did not address certifications, but that it came up in an example about claims of general environmental benefits).
122. 16 C.F.R. § 260.6. In addition to the Green Guides, certification marks are subject to the FTC’s Guides Concerning the Use of Endorsements and Testimonials in Advertising (“Endorsement Guides”). 16 C.F.R. pt. 255 (2009). Section 255.4, Endorsements by organizations, is the section most relevant to certification marks.
123. 16 C.F.R. § 260.6(a).
124. Id. § 160.6 example 1.
basis.”

Despite the FTC’s repeated reluctance to engage in more guidance or enforcement, many commenters on the FTC’s proposed rules pushed for requiring a higher level of substantiation for certifications and seals.

Although the FTC has increased environmental advertising enforcement actions, it is the only entity that can bring enforcement actions under the FTC Act; therefore, most instances of deceptive environmental marketing go unscrutinized. Given the proliferation of environmental marketing, the FTC’s policing on that front seems paltry: after two decades, the Green Guides are still not binding regulation and the handful of enforcement actions do not cover the full range of greenwashing. The FTC’s rather sluggish actions can be traced to agency expertise, or its absence: the FTC did not believe it had the power to create environmental policy nor the technical expertise to address complex environmental issues. Recognizing its limited technical expertise, the FTC “actively consult[ed]” with specialist agencies, such as the EPA, to prevent duplicative or conflicting guidelines. Despite consultation, the FTC’s Green Guides are largely devoid of the technical detail necessary to create useful guidelines. This continued lack of technical detail, even after two decades, highlights the need to bring in expert agencies. The EPA has been willing and able to promulgate at least more technically detailed guidelines, if not actual regulation.

III. GOVERNMENT AS MARKET PARTICIPANT AND INFLUENCER

American culture venerates private capitalism, and overarching national programs of the type found in many other countries would be unlikely here. Monolithic government legislation and regulation are not viable.

125. FED. TRADE COMM’N, supra note 119, at 97.
126. Id. at 95–96.
128. 5 McCARTHY, supra note 23, § 27:119.
129. Id.
133. See generally U.S. ENVTL. PROT. AGENCY, ENVIRONMENTAL LABELING ISSUES, POLICIES, AND PRACTICES WORLDWIDE (1998) (an EPA report comparing and contrasting the labeling programs of 18 foreign countries and several limited United States programs). Germany’s Blue Angel
Instead, fragmented government-run programs and private market solutions are the norm, if not de rigueur.\footnote{U.S. ENVTL. PROT. AGENCY, supra note 133, at 6–7.} A voluntary certification program’s potential to increase profits can be the carrot to governmental penalty’s stick. Businesses usually balk at more regulation; therefore, a market incentive may be more palatable to businesses. On the other hand, consumers are often skeptical about the legitimacy of programs where the business interests of the stakeholders may conflict with consumer interests.\footnote{Id. at 56–57; see Nick Feinstein, Learning from Past Mistakes: Future Regulation to Prevent Greenwashing, 40 B.C. ENVTL. AFF. L. REV. 220, 250 (2013) (discussing limitations of private sector attempts to prevent greenwashing). For an even more cynical view, see Donald A. Taylor, Certification Marks—Success or Failure?, 42 J. MKTG. 39, 46 (1958) (concluding that “it is apparent” the private sector has “little desire to aid the consumer directly” through the use of certification marks, and that most consumer benefits are “secondary and indirect”). It is likely, however, the cultural attitude has shifted—at least somewhat—since Taylor made his observations.} A fee-based, industry-managed program may set standards at a less stringent level to encourage a higher volume of certification, and in turn, a higher volume of certification fee income. Technology has made information dissemination easy and wide-reaching; consumer and environmental watchdog groups can increasingly alert consumers to misleading claims through electronic means.\footnote{There is an app for that. Melissa Hincha-Ownby, iPhone Apps to Help Navigate the World of Greenwashing, 1-800-RECYCLING.COM (Apr. 6, 2010), http://1800recycling.com/2010/04/iphone-apps-help-navigate-greenwashing [http://perma.cc/H3ZJ-RWKY] (reviewing two iPhone applications that help consumers verify environmental claims and find environmentally responsible businesses).} Ultimately though, leaving consumer protection in the hands of private parties using little more than the threat of bad publicity is no substitute for legally enforceable standards.\footnote{Cf. Neil Gunningham et al., Social License and Environmental Protection: Why Businesses Go Beyond Compliance, 29 LAW & SOC. INQUIRY 307, 308 (2004) (showing that while social license drives some companies towards over-compliance, other companies comply with the bare minimum legal requirements regardless of public perception).}

Without the guidance of labels or marks, the consumer must try to compare goods with minimal information.\footnote{See generally supra, Part I.B, II (discussing the functions of trademarks and certification marks).} The opposite extreme, however, is no better: information overload can paralyze consumers,
rendering the same results as an absence of information. Registered certification marks help by ensuring that a third party has approved the good, but a certification mark needs a strong reputation to be effective, especially in a market where self-certification is allowed—with sufficient disclaimers—and marketers can use in-house ecolabels on goods. Although it is unlawful for a marketer to use a self-awarded mark in such a way that causes a reasonable consumer to believe it is a third party endorsement, many trademarks skirt the line.141

The government is a natural choice for controlling against unscrupulous marketing, with regulation being one possible tool. Direct ownership and control of a certification mark is another way for government to use the commercial market to effect policy goals. The government can further impose green requirements on its own activities, and incentivize certain types of private development using credits or fee waivers.142 Many local governments, in establishing green building codes, have adopted preexisting standards. Whether by mandate or convenience, government use of a certification mark can accelerate adoption of that mark in the market.143

There are downsides to a government-endorsed certification mark. While consumers will reasonably expect that private, third party certifications require a fee, they may not realize that fees may still be involved even when a certification program is government-regulated and run. The government is not immune to other pitfalls. Critics attack the bureaucratic nature of federal regulation of environmental marketing and the lack of inter-agency coordination—as illustrated by the FTC’s Green Guides.144 Political pressure and regulatory capture are also dangers that threaten federal intervention.145 There are also long-term considerations when letting private programs fill in for federal standards. If the federal government establishes its own certification programs and standards years

139. Wynne, supra note 6, at 111. The most common result, however, is neither of these extremes. Instead, consumers simply ignore information. Id.
140. 16 C.F.R. § 260.7(a).
141. Complaint, supra note 16.
143. See infra Part V.B (discussing the development and rise of LEED).
144. See supra, Part II (discussing the development of the FTC’s anemic Green Guides).
IV. THE BUILDING INDUSTRY: A CONCRETE EXAMPLE

The bulk of the scholarship on greenwashing targets business-to-consumer transactions, but greenwashing is also common in business-to-business transactions. Even sophisticated businesses are vulnerable to misrepresentations on environmental claims, and governance solutions—including private, market-based ones—need to focus on the wider picture. The buildings sector is one such market that involves many business-to-business transactions where environmental claims are common. Because buildings have many characteristics not only unobservable but likely incomprehensible to the consumer—both business and individual—due to their technical nature, using certification programs allows developers to signal that a building has desirable environmental or sustainable qualities.

Although the transportation sector is often at the forefront of energy consumption concerns, the residential and commercial buildings sectors, when combined, consume more energy and release more greenhouse gases than any other sector. The United States is the second-largest

148. See, e.g., Jorge L. Contreras & Charles R. MacManis, Intellectual Property Landscape of Material Sustainability Standards, 14 COLUM. SCI. & TECH. L. REV. 485, 489–91, 500–02 (2013) (discussing the use of ecodels, trademarks, and certification marks in the construction business); see generally Lane, supra note 139, at 303–04 (the “2.0” in the title referring to the next big wave of greenwashing: transactions outside of the regular consumer market, such as business-to-business transactions).
149. Lane, supra note 139, at 303–04.
150. Id. at 281–82, 303–04 (discussing the disproportionate focus on the business-to-consumer paradigm of greenwashing and the need to pay attention to the rise of business-to-business greenwashing).
152. See, e.g., D.M. Phelps, Certification Marks under the Lanham Act, 13 J. MKTG. 498, 502 (1949) (observing that “[c]ertification is much more important to the consumer in relation to non-observable product characteristics”).
consumer of energy in the world, and the United States buildings sector alone consumed 7% of global energy in 2010. Changes to how buildings are built and operated can have dramatic effects on a per-building basis, and with the size of the buildings sector, even small changes across the sector can have cumulatively large effects.

The buildings sector can benefit from certification programs, and small changes on a widespread scale can have cumulatively significant impacts. Development without a deliberate focus on environmentalism or sustainability will “almost always result in a new building subscribing to some of the primary concepts of green building” because the practical drive towards efficiency and economy naturally overlap a great deal with sustainability. As state and local-level building codes become greener, compliance often means building sustainably.

Government involvement in encouraging or requiring green construction—at all levels of government—has significantly changed the market. Though federal action has been largely limited to requirements imposed only on federal agencies, other levels of government are imposing similar requirements upon government-sponsored development and new private development. Rather than drafting green building codes from scratch—which would require a hefty level of resources and expertise—many governments incorporate existing certification programs.

Two of the most commonly used certification programs are Energy Star and Leadership in Energy and Environmental Design (“LEED”), which are also two of the most publically known certification programs. That level of recognition is likely due to government involvement and promotion using mechanisms unavailable to private parties, such as tax credits or mandates. As the largest consumer of energy in the United States, changes to the

---


156. Id. China earned the dubious honor of being “first” in 2010.

157. Id.


162. Furr, supra note 142, at 221–22.

163. Id.

federal government’s operations can greatly reduce energy and resource consumption on a global scale. Self-imposed requirements allow governments to set a good example for both public and private future projects, but their effects can extend into the private sector as well.

Legally mandated use of private certification programs raises some constitutional concerns, however, when applied to private parties. Municipalities have successfully encouraged private certification programs in a voluntary manner (e.g., through tax incentives), and the federal government has required that its own buildings meet LEED standards. But when private buildings must meet standards set by a non-governmental organization, there may be due process issues as private processes are pressed into public service.

A. Energy Star

In order to carry out its mandate for reducing air pollution, EPA began the Energy Star program in 1992 as a “voluntary, public–private partnership designed to reduce energy use, greenhouse gas emissions, and related air pollution.” The success of the Energy Star program—and brand—grew from the cooperation between the federal agencies, market players, and other policy makers. The EPA has worked with regional groups carrying out state-level energy market restructuring and improvements. Together they have promoted energy efficiency—and the

---

U.S. economy, the Federal Government spent more than $24.5 billion on electricity and fuel in 2008 alone.”)


168. Infra Part IV.B.

169. See Durham, supra note 161, at 34 (raising due process concerns when municipalities mandate private development standards where the final determination as to whether a development meets the required standard is determined by “a non-governmental actor, without the right of appeal through a court or administrative judge”); see also Infra Part V.B (discussing some governmental sustainability requirements imposed on private development).


171. U.S. ENVTL. PROT. AGENCY, supra note 170.

Energy Star program itself—to transform those markets. Unlike most government marks, the Energy Star certification mark is registered with the USPTO. Because the mark is used on goods frequently imported, EPA must work with the United States Customs Service to check for infringing goods at the border. With a federal registration for the Energy Star mark, the EPA can have the Customs Service enforce protections granted by trademark law.

A large majority of United States consumers know of the Energy Star label and make purchases based upon the label. The program began as a way to promote energy-efficient computers, but has since expanded to include many types of household appliances, electronics, and even the buildings sector. In 2010, the United States Government Accountability Office investigated the Energy Star program’s verification process. Some of the highlights—or lowlights—include the certification of a gas-powered alarm clock and partnership status for several bogus companies. In response, the EPA and DOE implemented third party verification processes.

173. Id. at 6.
174. ENERGY STAR, Registration Nos. 3569551, 3575484.
175. U.S. ENVTL. PROT. AGENCY, supra note 170, at 7.
177. U.S. ENVTL. PROT. AGENCY, NATIONAL AWARENESS OF ENERGY STAR FOR 2012 ES-1–ES-3 (2013), available at http://www.energystar.gov/ia/partners/publications/pubdocs/NationalAwareness%20of%20ENERGY%20STAR%202012%20%20review%20compliant.pdf [http://perma.cc/8WYH-VAKS] (summarizing the 2012 survey, finding 87% of households recognized the label, with 70% having a “high understanding” of what is stands for, and 73% of households that recognized the label made at least one purchase where the label influenced their decision).
B. Leadership in Energy and Environmental Design

LEED is a prominent example of public–private use of a certification program. It is a privately-run certification system developed by the United States Green Building Council (“USGBC”), a non-profit organization composed of a broad selection of stakeholders, including the construction industry, environmental groups, and lawmakers. Unlike Energy Star’s focus on energy efficiency, LEED focuses on several categories for certification, including sustainability, water efficiency, and indoor environmental quality. Its prominence can be partially attributed to its widespread use by governments.

In 2007, Boston, Massachusetts, was the first major city to require private development to be LEED-certified. Several other cities have followed suit, with Washington, D.C.’s Green Building Act being recognized as one of the most comprehensive and demanding green building codes to date. As governments impose more green building requirements and as green building projects become more common, disputes over such projects, dubbed “LEEDigation,” are expected to rise. LEEDigation may, but does not have to, center on LEED certification: the

---

183. Andy Medici, New Law Bars LEED Energy Certifications for DoD Building Projects, FED. TIMES (Jan. 3, 2012), http://www.federaltimes.com/article/20120103/FACILITIES02/2012010302 [http://perma.cc/2N73-D8N8] (noting that “[g]overnment buildings make up 27 percent of all LEED projects”). From 2003 to 2013, the minimum requirements were pegged to LEED certifications, but in late 2013, the federal government now allows Green Globe certification as an alternative to LEED.
184. Durham, supra note 161, at 32.
185. Id.
187. Durham, supra note 161, at 63–66, 80 n.99 (crediting Chris Cheatham with coining the term, but also noting that “performance slippage” is the professional term for a failure to meet contracted-for requirements, a common ground for LEEDigation). It appears that “LEEDigation” is not limited to LEED projects, and applies more generally to all green building-related litigation. A good pun is hard to pass up. Chris Cheatham, LEEDigation, GREEN BLDG. LAW UPDATE (Apr. 15, 2009), http://www.greenbuildinglawupdate.com/2009/04/articles/legal-developments/leedigation [http://perma.cc/Q6ZE-CZ88] (defining “LEEDigation” as simply “green building litigation”).
development of a building involves so many components that there are many other opportunities for green litigation.188

V. PROPOSED REFORMS AND ACTIONS

   A. National Uniformity

Consumers and producers have been calling for uniform federal regulations to bring certainty to environmental marketing.189 The USPTO administers trademarks, but the FTC is primarily responsible for consumer protection, and the nebulous field of ecolabels further implicates the EPA, USDA, and FDA. Though tasked with leading the regulatory effort, the FTC is woefully limited in technical expertise regarding environmental issues, and consultation with the EPA has proven insufficient to overcome this weakness when crafting regulations on environmental marketing.190 A higher level of inter-agency cooperation is necessary to carry out these consumer protection duties.

A separate but related goal would be for the federal government to create a nationwide labeling standard.191 Even a narrowly focused environmental labeling program, however, has its difficulties: there are no obvious criteria to include on an environmental label, nor are there well-established quantitative measures for many of the potential criteria.192 The same technical hurdles that have stymied efforts to create uniform standards will likely stymie a uniform regulatory program.193

188. See generally Miller et al., supra note 151, at Part III.A (sub-headings under Risks Inherent in Green Construction/Litigation include: Standard of care; Materials/warranty/negligent misrepresentation litigation; Sales representation litigation/"Greenwashing"; Failure to obtain LEED certification/challenges to certification; Compliance with Laws; Insurance Considerations; and Energy Savings/Project Costs) (original capitalization preserved).

189. Supra Part II.

190. Lauren C. Avallone, Green Marketing: The Urgent Need for Federal Regulation, 14 PENN ST. ENVTL. L. REV. 685, 699 (2006) (discussing why the EPA should take over from the FTC in regulating environmental marketing claims).

191. Supra note 133.

192. Supra Part II, text accompanying notes 130–32.

193. See Lathrop & Centner, supra note 146, at 164 (noting that the "difficulties in applying the research and science of environmental management to label information” has delayed agency action).
B. Trademark Law

1. Greater Scrutiny of Standards During Registration

Despite its consumer protection underpinnings, trademark law is ill-suited to defeat fraudsters. Trademark law developed to prevent use of trademarks in an inappropriate manner, not to provide causes of action to misled consumers or indirect competitors in unfair competition claims. The USPTO acts as a gatekeeper of sorts, barring confusingly similar or misleading marks, but is not responsible for policing how registered trademarks are used. Instead, the FTC is the agency tasked with actively seeking consumer protection. One reform option that can better protect consumers from misleading certification marks while retaining the USPTO’s duties as gatekeeper is raising the requirements for registering certification marks. By raising the bar, the USPTO’s gatekeeping function can better filter out some of the obviously deficient programs. Such a change, however, would make it harder to register for a certification mark, increasing the likelihood of people bypassing the process. Applicants may seek to deliberately register marks as ordinary trademarks and then use them as certification marks. This practice results in an unfair advantage for those who improperly file under less stringent criteria.

2. Creation of a Federally-Protected Certification Symbol

The laws need to better distinguish between certification marks and non-certification marks, and the benefits for registering a certification mark should be increased to better match the burdens. As the Lanham Act stands today, registrants seeking certification marks not only have to go through more registration requirements, but registered certification marks are also subject to cancellation on all grounds applicable to regular trademarks, plus more. So while there is no obvious benefit to registering for a certification mark, there are clear benefits to registering for a trademark. Carefully tailored licensing agreements allow mark owners to use trademarks in a manner largely indistinguishable—to a consumer—from certification marks, while preserving (1) the right to apply the mark to one’s own goods, and (2) the broad discretion to reject licensing the mark on otherwise qualifying goods. While such a scheme could be administered

---

194. See supra text accompanying notes 60–65.
195. See Arnone, supra note 90, at 252 (explaining how Nintendo’s choice to register its seal of quality as a trademark allowed it to “maintain[] the advantages of control—the option to choose whom to license and not to license to use the mark.”) (citation omitted).
impartially, the broad discretion given to a trademark owner lends itself to less-than-impartial administration. Closing that loophole is an important step.

With a lopsided array of trade-offs for registering trademarks versus certification marks, and the absence of any discernible difference to consumers, it is unsurprising that some trademarks are used as certification marks. The neutral third party aspect of certification marks is the major distinguishing factor, and emphasizing that can better offset the more demanding requirements of registering and maintaining a certification mark. Just as the ® symbol is reserved for federally registered trademarks, a certification mark-specific equivalent could prove useful. By creating a certification mark for certification marks, the USPTO and registrants can signal to consumers that the mark is truly from a third party. By distinguishing certification marks in this manner, consumers can better trust that certified goods have been verified by a neutral, third party. Such a symbol has no power if consumers are not aware of what it symbolizes. Given that the public is not well-acquainted with the nuances between the ® symbol and using ™, it would be reasonable to expect that educating the public would be necessary before a CERT symbol would have much meaning to consumers. If the certification mark registration screening process could be reformed to include greater scrutiny of the applicant’s certifying legitimacy, then the USPTO’s certified certification mark would further demonstrate reliability to consumers.

3. Broader Standing for Citizens’ and Competitors’ Suits

The FTC is tasked with consumer protection. It is statutorily authorized to seek cancellation of improperly used certification marks, but its handling of greenwashing has been limited. Even after an increase in enforcement actions, the FTC continues to handle complaints on a case-by-case basis. Rather than give more work to an already-overburdened agency, the market can police itself if competitors and consumers have mechanisms through which to hold marketers accountable. The statutory language under section 43(a) of the Lanham Act is broad enough to encompass

196. Holtzman, supra note 62, at 183.
citizen/consumer suits and indirect competitor suits.\textsuperscript{199} Extending standing to allow citizen-suits would give consumer watchdog organizations and other groups a way to act upon consumer concerns. Allowing an array of plaintiffs would also better reflect the nature of information channels in the digital age. Misrepresentations affect direct competitors, indirect competitors, and even non-competitors.\textsuperscript{200} The more parties that can keep an eye on each other to prevent fraudulent claims, the less the government expends to regulate these practices directly, and the less the public suffers from fraud. These changes can benefit more than just the green-minded segment of the market.

CONCLUSION

Voluntary certification marks and programs in the private market can change consumption patterns for the better. Even the use of privately-run certification programs can effect large-scale change through partnerships with local, state, and federal governments. A large-scale patron can extend the reach of a program nationwide and provide a strong boost to legitimacy. The informational accuracy, however, needs to be more robust: mischaracterization of the environmental benefits of a marketed product undermines the proper functioning of the market and can harm both consumers and honest competitors. Unfortunately, the current laws and legal mechanisms are especially inadequate to police the increasing use of certification and endorsement claims in environmental marketing. Although federal agencies are attempting to resolve these issues, their efforts have been insufficient. The legal nuances of certification marks are less developed than in regular trademark law, but as the market for green goods continues to grow, consumer reliance on certification marks is likely to continue. Certification mark law must be brought into sharper legal focus, and loopholes that encourage registration of trademarks over certification marks must be closed. Besides closing the loopholes, a federally-backed certification symbol can better accentuate the strength a certification mark has over a regular trademark: neutrality.

\textsuperscript{199} Id. § 1125(a); see supra notes 46–58 and accompanying text (outlining the disparity between the broad language of section 43(a) and court-imposed standing).
\textsuperscript{200} Palladino, supra note 47, at 1642.
INTRODUCTION

New Hampshire is known for its scenic beauty, and many of the state’s residents are fiercely protective of its land. When a large Canadian hydroelectric company approached residents of New Hampshire’s rural north, hoping to purchase tracts of land on which to construct electrical
transmission infrastructure for a project known as “the Northern Pass,”
many landowners rejected these overtures out of a “devotion to New
Hampshire’s beauty.”2 If completed, the proposed project would originate
at a hydropower facility in Quebec and run its transmission lines down into
northern New Hampshire and through the White Mountains, utilizing
mostly existing right-of-way easements.3 New Hampshire residents object
to the project’s proposed transmission towers, claiming that the structures
would rise far above the tree line and tarnish the state’s scenic beauty.4 The
transmission towers proposed by Northern Pass would be much larger than
the wooden power poles currently occupying the existing rights-of-way.5
Furthermore, environmental groups allege that the project would have a
dire effect on the environment.6

This Article argues that under New Hampshire law, the Northern Pass
project may overburden the existing right-of-way easements it will
employ.7 In New Hampshire, even if a particular use is seemingly allowed
by the easement’s language, it still may not unreasonably burden the
servient estate.8 New Hampshire courts apply a “rule of reason” to
determine whether an easement’s use is reasonable or if it represents an
unreasonable burden.9 In order to prove this claim, landowners would likely
need to provide concrete evidence that their property value was or would be
substantially harmed by the construction of new transmission towers.10

Part I begins by exploring Northern Pass itself, including the legal and
political maneuvering that has occurred during the project’s short-yet-
convoluted history.11 Part II presents an overview of the common law of

3. Barbara Tetreault & Martha Creegan, The Battle Over the Northern Pass, BUS. N.H.
   [http://perma.cc/S6WM-BHHC].
4. Rik Stevens, 2014 an Important Year for Northern Pass Plan, CONCORD MONITOR
   (Jan. 4, 2014), http://www.concordmonitor.com/home/10071769-95/2014-an-important-year-for-
5. See Chris Jensen, Northern Pass May Face Right of Way Legal Battle, N.H. PUB.
   [http://perma.cc/3YHQ-YFJ7] (discussing the current height of wooden telephone poles of 80 to 95
   feet high with metal grid towers that would be higher than many trees).
6. See Potential Impacts: How Will This Project Affect You?, CONSERVATION L. FOUND.,
   2014) (considering the threat the Northern Pass project would have on endangered species and impact
   on vegetation, forests, wetlands, and the animals that live there).
7. Id.
8. Id.
9. Id.
10. Jensen, supra note 5.
11. See infra notes 14–73 and accompanying text.
easements, specifically as it relates to overburdening. It also explores the relevant case law in and outside New Hampshire. Finally, Part III argues that a lawsuit against Northern Pass alleging unreasonable use of easements is feasible, but would depend on strong evidence showing that the new transmission towers substantially burden the servient property owners.

I. THE ROAD TO NORTHERN PASS

A. Project Details and Interested Parties

Northern Pass is a proposed project which would run 180 miles of new power lines through New Hampshire from Canada. The project—a corporate partnership between Northeast Utilities, which is the parent corporation of the Public Service Company of New Hampshire (“PSNH”), and Hydro-Quebec—would construct over one thousand high-voltage transmission towers throughout the state. Completing the Northern Pass project would cost 1.1 billion dollars and would transport 1,200 megawatts of hydropower from Canada to New England’s power grid. Much of the project route would feature large transmission towers, ranging from 80 feet to 135 feet tall, to transport electricity. This would make the towers dwarf trees in the area.

The Northern Pass project was announced in late 2010. Since that time, Northern Pass has elicited vigorous opposition from both...
environmental groups and New Hampshire residents. Opponents believe that the transmission towers and power lines would ruin the state’s natural beauty and lead to a loss of tourism revenue. Tourism is New Hampshire’s second largest industry, and many fear that the proposed transmission towers would irreparably harm that industry, especially in the White Mountain region.

Major tourist spots in the region have come out against the project because of its potential impact on tourism. Additionally, of the 31 communities through which the project would pass, 30 have voted to oppose Northern Pass. However, most of these votes are symbolic protests against the project; the ordinances would likely not be enforceable against Northern Pass if it achieves state approval.

**21. Why the Northern Pass Project Matters, supra note 15.**

**22. Id.**


include the creation of taxpayer-sponsored legal funds specifically
designated to combat the Northern Pass project.  

Environmentalist groups such as the Society for the Protection of New Hampshire Forests (“Forest Society”) oppose Northern Pass because it would “directly impact more than two dozen tracts of conserved land in 17 communities.” The Conservation Law Foundation has additional concerns with the project, from the increase of greenhouse gas emissions to the degradation of wilderness habitats. The project’s most devastating environmental impact would be in Quebec, where Northern Pass will require the use of massive reservoir systems. The reservoirs are created by dams, through which the flow of water from the reservoirs is steered into power-making turbines. These hydro impoundments would divert multiple large rivers, creating “devastating impacts on hundreds of miles of river ecosystems.”

Proponents for Northern Pass, conversely, argue that despite any drawbacks, the project is necessary and would benefit the region. It is estimated that about 1,200 construction jobs would be created by the project. Supporters also claim that the completed project would generate $300 million a year in revenue for the state. Additionally, Northern Pass argues that the project would reduce New England’s dependence on fossil fuels and thus reduce carbon emissions.


32. Why Does AMC Oppose Northern Pass?, supra note 25. The impoundments and resulting “flooding of boreal forests” would cause “the emission of significant amounts of greenhouse gasses.”


34. Stevens, supra note 4. This is important especially in New Hampshire’s North Country, where the closure of paper mills has sent unemployment skyrocketing.

35. Id.

36. Tetreault & Creegan, supra note 3.
It is true that there are some legitimate long-term concerns about New England’s energy security.\footnote{See Dave Solomon, \textit{Gas Pipeline Not Enough to Avert New England Energy Crisis}, \textit{N.H. UNION LEADER} (Feb. 17, 2014), http://www.unionleader.com/article/20140218/NEWS05/140219222 [http://perma.cc/DPU6-A7KA] (discussing the future energy costs that New Hampshire may be hit with).} For example, the region’s energy demand has increased more than 20% in the last decade.\footnote{Need for Energy, \textit{N. PASS}, http://northernpass.us/need-for-energy.htm [http://perma.cc/9MVK-GUXP] (last visited Mar. 7, 2014).} Additionally, the region has become very reliant on natural gas for electricity production—in 2000, just 15% of the region’s electricity was produced from natural gas, whereas in 2012 that number inflated to 52%.\footnote{Id.} The Northern Pass project is meant to provide “renewable, low-cost power” to help secure the region’s long-term energy needs.\footnote{Callahan, \textit{supra} note 24.} 

\section*{B. Legal and Political Maneuvering: The Road to Approval}

In 2011, Northern Pass publicly announced its proposed route for the project.\footnote{Why the Northern Pass Project Matters, supra note 15.} The proposed route was subjected to a hailstorm of criticism, especially in New Hampshire’s North Country, which is known for its scenic vistas.\footnote{Id. (commenting on how Northern Pass “will deface New Hampshire’s famous forests, hurting tourism”).} The project requires approvals from multiple state-level bodies, including the New Hampshire Public Utilities Commission and from the New Hampshire Energy Facility Site Evaluation Committee.\footnote{Permitting Process and Timeline, \textit{CONSERVATION L. FOUND.}, http://www.clf.org/northern-pass/permitting-process-and-timeline/ [http://perma.cc/WBJ2-WV44] (last visited Mar. 7, 2014).}

Additionally, because Northern Pass would cross the international border from Canada to the United States, the corporation is required to obtain a Presidential Permit from the United States Department of Energy.\footnote{Id.} The Department of Energy (“DOE”) must determine that a project is “consistent with the public interest” in order for a Presidential Permit to be issued.\footnote{Id.; see 42 U.S.C. § 4332 (2006) (requiring a detailed statement on the environmental impact of major Federal actions significantly affecting the quality of the human environment).} The major component of the DOE’s analysis is an Environmental Impact Statement (“EIS”) as required by the National Environmental Policy Act (“NEPA”).\footnote{Id.} Preparation of the EIS began in March 2011 when the DOE held a series of scoping meetings throughout the state and solicited
written public comments. 47 To prepare an EIS, the DOE considers the proposed project’s significant environmental impacts and reasonable alternatives.48 A draft EIS is expected to be released in 2015.49

Much of the Northern Pass project’s planned route was contingent on acquiring 40 miles of new rights-of-way in northern New Hampshire. 50 To that end, Northern Pass spent millions of dollars attempting to purchase enough contiguous land parcels to build their transmission corridor through the North Country. 51 However, they were met with staunch community resistance as well as coordinated efforts from the New Hampshire Forest Society, which fundraised aggressively in order to purchase several conservation easements on parcels of land desired by Northern Pass.52 The efforts of the Forest Society seriously complicated Northern Pass’s originally proposed route.53

Wary despite their successes, opponents of Northern Pass feared that the project would seek to invoke eminent domain to bypass their obstacles.54 Northern Pass claimed it did not intend to use eminent domain, and opponents took solace in a state constitutional amendment, passed in 2006, which prohibits the taking of a person’s property for the purpose of private development or other private use. 55 Despite the company’s

47. Permitting Process and Timeline, supra note 43.
50. Why the Northern Pass Project Matters, supra note 15.
53. Loder, supra note 52.
assurances and the protections offered by the 2006 amendment, public outcry demanded even stronger legislative safeguards.\textsuperscript{56} Activists feared that Northern Pass could receive an exemption from the constitutional amendment because of the project’s public benefits.\textsuperscript{57} Therefore, in 2012, the New Hampshire legislature passed a law restricting the use of eminent domain even further.\textsuperscript{58} This legislation was aimed directly at Northern Pass, and its sponsors believe that it completely blocks any possibility of eminent domain use for the project.\textsuperscript{59}

The maneuvering by the Forest Society and others forced Northern Pass to scrap much of their original proposed route in the North Country.\textsuperscript{60} This led to the development of a new route, which was revealed in summer 2013 after months of delay.\textsuperscript{61} The new proposed route revealed that much of the land purchased in the North Country by Northern Pass was now of no use to the project as a result of the Forest Society’s actions.\textsuperscript{62} The new proposal also responded to concerns about the project’s visual impact by offering to bury eight miles of power lines.\textsuperscript{63} Instead of using private property for the northern part of the project route as originally planned, Northern Pass changed its plan to use rights-of-way along state and local roads.\textsuperscript{64}
These amended plans will require approval by the state’s Department of Transportation.65 A second public comment period for scoping was conducted by the United States DOE in late 2013 and a draft EIS, which precedes the final EIS, is expected to be released in 2015.66 After an EIS is issued, the DOE will decide whether to approve the proposed project and issue a Presidential Permit.67 If a federal permit is issued, New Hampshire’s Site Evaluation Committee will begin a nine-month review of the project, which will include public hearings.68 If this state approval is received by Northern Pass, the project will essentially have cleared its final regulatory hurdle.69 Although Northern Pass initially hoped to begin operation by 2015, final approvals are now not expected until late 2016 and will be followed by two years of construction.70

II. RIGHT-OF-WAY EASEMENTS

A. An Overview of Rights-of-Way

Northern Pass’ transmission towers will be built on a combination of new and existing rights-of-way (“ROWs”).71 ROWs are the physical land which a person or corporation may acquire the right to use.72 While an easement is the right to use the land,73 the ROW is the land itself—in the case of electric utilities, the land on which transmission towers will be built and over which power lines will run.74 Practically, the terms are often used

65. Id.
67. See U.S. DEP’T OF ENERGY, supra note 66 (discussing the necessary steps before DOE considers issuing a Presidential Permit).
68. Stevens, supra note 4.
69. See id. (explaining how an approval from the Site Evaluation Committee will result in a construction permit to begin work).
71. Why the Northern Pass Project Matters, supra note 15.
72. See BLACK’S LAW DICTIONARY 1440 (9th ed. 2009) (describing a right-of-way as a “strip of land subject to a nonowner’s right to pass through”).
74. See BLACK’S LAW DICTIONARY, supra note 72, at 1440 (using the third definition of right-of-way).
interchangeably, though “right-of-way” is often used in the context of utility transportation and public roads.75

Easements are often granted in perpetuity and are not usually subject to termination or expiration.76 The grantor of the easement, or the original landowner, owns what is known as the servient estate, which is the land burdened by the easement.77 The person or corporation who is benefited by the easement holds what is known as the dominant estate.78 Typically, the servient landowner is given a one-time payment for the ROW.79 The servient estate owner may still use the land burdened by the ROW for any purpose which does not conflict with the “paramount rights of the power company.”80


A description of the common law on easements is set out in Restatement (Third) of Property section 4.10, which addresses “Use Rights Conferred by a Servitude.”81 The Restatement reads:

[T]he holder of an easement . . . is entitled to use the servient estate in a manner that is reasonably necessary for the convenient enjoyment of the [easement]. The manner, frequency, and intensity of the use may change over time to take advantages of developments in technology and to accommodate normal development of the dominant estate or enterprise benefited by the servitude.82

The Restatement goes on to say, “[T]he holder [of the easement] is not entitled to cause unreasonable damage to the servient estate or interfere unreasonably with its enjoyment.”83

76. Id.
77. BLACK’S LAW DICTIONARY, supra note 72, at 586.
78. Id.
81. RESTATEMENT (THIRD) OF PROP.: SERVITUDES § 4.10 (2000). Easements (and ROWs) are a type of servitude. Id.
82. Id.
83. Id.
The Restatement’s comments for section 4.10 help to resolve the tensions found in the definition. Comment c. states that the “[s]ervitude holder is entitled to make any use reasonably necessary for convenient enjoyment” of the easement. The comment acknowledges that uses within the scope of the easement will change over time as technology and other factors change. The intent of both parties and whether a use should have been contemplated is relevant. Comment f. specifically deals with “[c]hanges in the manner, frequency, and intensity of use” of the easement, again noting that use of the easement may change to take advantages of developments in technology and other normal evolutions. As an illustration, comment f. uses the hypothetical of a power company that holds an easement to run its power lines on wooden poles through a property. The illustration concludes that the power company would be justified to replace the wooden power poles with taller, steel structures. However, the illustration qualifies that determination by stating that the power company could not replace the original poles if “the increased size of the structures would unreasonably interfere with the enjoyment of the servient estate.”

Comment g. explores what the Restatement means by “unreasonable damage to [the] servient estate.” Although the comment acknowledges that a certain amount of inconvenience is to be expected on the part of the servient estate, varying degrees of damage may not be unreasonable. Comment g specifically names the “aesthetics and the character of the property” as important concerns in determining whether a use or improvement will cause unreasonable damage to the servient estate.

Similarly, comment h. deals with “unreasonable interference with enjoyment of servient estate.” The comment notes that what constitutes “unreasonable” is largely circumstance-specific, and again specifically notes aesthetic considerations as relevant. As an illustration, the comment

84. See id. (explaining the application and public policy behind easements, and providing illustrations of application).
86. Id.
87. Id.
89. Id.
90. Id.
91. Id.
92. RESTATEMENT (THIRD) OF PROP.: SERVITUDES § 4.10 cmt. g. (2000).
93. See id. (explaining how a certain amount of damage is acceptable so long as it is not more than contemplated by the parties or what is unreasonable).
94. Id.
96. Id.
poses a hypothetical in which A, the owner of Whiteacre, is granted an easement “for ingress and egress” over Blackacre. 97  Blackacre is a residential, suburban area.98 The illustration concludes that A is not entitled to use the easement for rail, heavy trucks, or other loud vehicles because “the noise, vibrations, and appearances will interfere unreasonably with enjoyment of Blackacre,” the quiet suburban property. 99 The Restatement indicates that although an easement’s use is expected to evolve over time, that use may not unreasonably burden the servient property.100

C. Case Law Relevant to the Overburdening of Easements

1. Non-Binding Precedent

Legal action attempting to halt Northern Pass would take place in New Hampshire. 101 However, because New Hampshire courts have not considered any cases directly analogous to a theoretical overburdening complaint against Northern Pass, it is useful to consider precedent from other jurisdictions.102

In Burkhart v. Jacob, the Oklahoma Supreme Court addressed the issue of easement overburdening.103 In Burkhart, the dominant estate holders wanted to use a right-of-way in order to transport sand and gravel using heavy trucks.104 In reversing the trial court’s order of summary judgment for the servient estate owners, the Court stated that “[w]hether or not a use is reasonable is a question of fact,” with the burden on dominant estate owners to show that the proposed use was allowable.105 If the servient estate suffers “(1) decreased property value, (2) increased noise and traffic or interference with the servient owner’s peace and enjoyment of the land, and (3) physical damage to the servient estate,” this may indicate that a

97. Id.
98. Id.
99. Id.
100. See infra notes 81–98 and accompanying text (explaining that advances in development are expected but not to the extent that there will be interference with the use or enjoyment of a servient estate holder’s property).
101. Jensen, supra note 5.
102. See id. (explaining two pertinent New Hampshire Supreme Court Cases).
104. Id. at 1048.
105. Id. at 1050.
proposed use could be unreasonably burdensome. The Supreme Court of Alabama has also followed this definition of an unreasonable burden.

In *Farrell v. Vermont Electric Power Company*, the Vermont Supreme Court considered a utility company’s installation of additional transmission lines on a ROW within the plaintiff’s servient estate. The ROW originally contained wooden power poles, and the utility company replaced these with newer, taller metal towers. Plaintiff asserted that there was a genuine issue of material fact as to whether the power company had overburdened their easement. The Court affirmed the trial court’s grant of summary judgment for the power company. The Court found that the plaintiff “produced no evidence that the [new power] line imposes an additional burden on the Property.” Although the plaintiff argued that the new towers, if they fell, might damage his property, the Court deemed this mere speculation. Additionally, the Court determined that the plaintiff lacked any support for his claim that the difference in appearance created by the taller towers would impose a burden on the property.

2. Binding Precedent

In one of the first New Hampshire state court decisions regarding the proper extent of an easement, the Superior Court stated: “[T]he grantee of a [right of] way is limited to use his way for the purposes and in the manner specified in his grant.” The interpretation of the easement deed language itself is a question of law. The intention of the parties at the time of the easement’s conveyance determines the interpretation of the easement. However, a court need not consider extrinsic evidence to determine a

106. See id. (listing burdens on the servient estate that affect the reasonableness of the change in use).
109. Id. at 1113.
110. Id. at 1114.
111. Id. at 1113–14.
112. Id. at 1117.
113. Id.
114. Id.
117. See *Heartz*, 808 A.2d at 81 (explaining that language in deeds controls, not the parties’ intentions).
deed’s meaning if the language of the easement is clear and unambiguous.118

If the easement language is ambiguous, the court must apply a reasonableness test, or “rule of reason,” to interpret the deed.119 The rule of reason requires a court to “give a meaning to words which the parties or their ancestors in title have actually used . . . or else to give a detailed definition to rights created by general words either actually used, or whose existence is implied by law.”120 Therefore, the rule of reason is used by the court to define ambiguous terms or meanings in the easement language itself.121 By engaging in this inquiry, the court may determine whether or not a particular use is included under the easement’s language.122

However, even if use of an easement may be included under its terms, it may still be found to unreasonably burden, or overburden, the servient estate.123 The rule of reason is again employed by New Hampshire courts to evaluate whether a use is an unreasonable burden.124 In using an easement, both parties “must still act reasonably under the terms of the grant so as not to interfere with the use and enjoyment of each others’ estates.”125 When the rule of reason is applied in this manner, it is “treated as a question of fact that is determined by considering the surrounding circumstances, such as location and the use of the parties’ properties, and the advantages and disadvantages to each party.”126 An unreasonable burden will be found when there is an alteration in use “so substantial as to result in the creation and substitution of a different servitude from that which previously existed.”127 A complaining party must make “sufficient factual allegations of unreasonable use or burden” to succeed in a claim.128

If a change of use is “a normal development from conditions existing at the time of the grant, such as an increased volume of traffic, the enlargement of a use is not considered to unreasonably burden the servient estate.”129 The New Hampshire Supreme Court determined in Downing House that an easement, originally used as a passageway to access a

118. Id.
119. Id.
120. Sakansky v. Wein, 169 A. 1, 2 (N.H. 1933).
121. Heartz, 808 A.2d at 81.
122. See id. (explaining how the rule of reason is used to interpret the parties’ intentions concerning easements).
124. Heartz, 808 A.2d at 81.
128. Heartz, 808 A.2d at 82.
A residential home, could reasonably be used to access a commercial parking lot without overburdening the easement. The Court found that this use was a reasonable evolution considering that “both properties as well as the surrounding area have been converted to commercial use.”

In *Crocker v. College of Advanced Science*, an easement to convey sewage by an eight-inch pipe to the servient estate had been granted 60 years earlier to the owner of a summer inn. At the time, the summer inn operated only two or three months a year and had a capacity of just 35 guests. Many years later, the defendant purchased the property and opened a school, which operated around nine months out of the year. Eventually about 200 people were making use of the buildings and the sewage easement which served them. The plaintiff observed that the flow of sewage onto his servient property had greatly increased and begun to accumulate on the surface of his land. The servient owner petitioned for a permanent injunction, alleging an unreasonable burden caused by use of the easement. The Court affirmed the trial court’s finding that the easement’s use had changed so dramatically that it “impose[d] an unwarranted additional and new burden on the servient property of the plaintiff.”

In *Nadeau v. Town of Durham*, a ROW ran over plaintiff’s property. A single family residence and a ROW used as the driveway was the classic use of the dominant estate. However, the dominant owner planned to build an elderly housing community on the parcel, featuring 14 condominium units and a parking lot. The ROW would be used as part of the housing development’s driveway and parking lot. The trial court found that the proposed use of the easement was impermissible for two reasons. First, the trial court “considered the proposed use, the rights and burdens of the parties at the time of the creation of the right-of-way, the reasonable expectations of the parties relative to its future use, [and] changed circumstances of the parties…” and concluded that the plaintiff...
could not have contemplated the proposed use of the easement.\textsuperscript{144} Second, the trial court found that the new use of the ROW would substantially burden the servient property.\textsuperscript{145} Specifically, “there would be increased noise, traffic, and lighting which would diminish the plaintiff’s use and quiet enjoyment of her property.”\textsuperscript{146} The Supreme Court affirmed the trial court’s determinations.\textsuperscript{147}

The New Hampshire Supreme Court again addressed the issue of easement interpretation in the 1990 case of \textit{Lussier v. New England Power Company}.\textsuperscript{148} This case dealt with a power company’s ROW over plaintiffs’ servient estate, on which transmission lines and towers had been built in 1930.\textsuperscript{149} In the 1980s, the power company moved to construct a third transmission line on the easement, and the plaintiffs initiated a suit to enjoin.\textsuperscript{150} The language of the original deed was extremely broad and granted the power company: “[T]he perpetual right and easement to construct, reconstruct, repair, maintain, operate and patrol . . . lines of towers or poles . . . the perpetual right and easement to construct, operate, and maintain transmission lines.”\textsuperscript{151}

The Court made clear that although the “rule of reason” should be used in instances where easement language is ambiguous, no such case existed here.\textsuperscript{152} The easement language was sufficiently explicit for the Court to determine, as a matter of law, that the power company’s addition would not exceed the easement’s language.\textsuperscript{153} However, even if an easement may be used for a certain purpose, that use must be reasonable “under the terms of the grant so as not to interfere with the use and enjoyment of [the] estate[].”\textsuperscript{154} In \textit{Lussier}, the plaintiffs “made no allegations of unreasonable interference or encroachment”; however, the Court noted as an example, if the plaintiffs had been “able to prove that the addition of the third line would cause adverse health effects from the increased voltage, then the addition might well have been determined to be an unreasonable use of the easement.”\textsuperscript{155}

\begin{itemize}
\item \textsuperscript{144} \textit{Id.}
\item \textsuperscript{145} \textit{Id.}
\item \textsuperscript{146} \textit{Id.}
\item \textsuperscript{147} \textit{Id.}
\item \textsuperscript{148} \textit{Lussier v. New England Power Co., 584 A.2d 179, 181 (N.H. 1990).}
\item \textsuperscript{149} \textit{Id.} at 180.
\item \textsuperscript{150} \textit{Id.} at 180–81.
\item \textsuperscript{151} \textit{Id.} at 181.
\item \textsuperscript{152} \textit{Id.}
\item \textsuperscript{153} \textit{Id.}
\item \textsuperscript{154} \textit{Id.} at 182.
\item \textsuperscript{155} \textit{Id.}
\end{itemize}
III. STOPPING NORTHERN PASS USING LEGAL ACTION

Environmental groups and local citizens in New Hampshire continue to oppose Northern Pass despite the company’s efforts to ease concerns. In addition, the political establishment of New Hampshire has strongly pressured Northern Pass to consider alternative route options and increase transparency in the process. New Hampshire’s governor, as well as its entire congressional delegation, has expressed concern about the possible negative impacts on the state. Opponents of the project are hopeful to succeed in stopping the project—or in pushing it completely underground—through a combination of political and regulatory pressure. Since Northern Pass still has several hurdles to pass on the regulatory front, including awaiting the results of the DOE EIS, most direct legal action is on hold until if and when the project actually begins.

A. The Overburdening of Existing PSNH Rights-of-Way

If Northern Pass gains approval, one of the remaining legal options for opponents of the project will be to object to the company’s use of existing PSNH ROWs, over which the bulk of the project’s transmission lines will run. Of the proposed 180 mile project, Northern Pass plans to use existing ROWs for 140 miles. These ROWs, owned by New Hampshire’s largest electric utility, PSNH, are available to Northern Pass because

156. See Stevens, supra note 4 (explaining that Northeast Utilities implemented outreach programs for the community).
159. Stevens, supra note 4.
161. Jensen, supra note 5.
162. Id.
PSNH’s parent company is Northeast Utilities—the main corporation behind the Northern Pass project. Some servient estate owners, along whose land PSNH holds easements, claim that Northern Pass’s proposed use of those easements would be impermissible. They argue that the new, much larger, transmission towers proposed by Northern Pass would unreasonably burden their property compared to the wooden transmission poles currently in use. The original PSNH ROWs were largely standard format easements granting the utility the perpetual right to do almost anything within the eased area related to delivering electricity. Despite this permissive language, landowners in New Hampshire argue that the Northern Pass project would overburden these existing easements.

1. Scope of the Easement

In evaluating the use of an easement, New Hampshire courts have a multistep process. The first step is to determine the meaning of the easement itself. This is a question of law. The PSNH easements to be used by Northern Pass contain broad language. The following language is from a 1952 easement grant in Grafton County, which deeded a right-of-way to PSNH:

"[The grantors] do hereby give, grant, bargain, sell and convey unto the Grantee and its successors and assigns forever, the RIGHT and EASEMENT to erect, repair, maintain, rebuild, operate, patrol and remove electrical transmission and distribution lines, consisting of suitable and sufficient poles and towers, with suitable foundations, together with wires strung upon and extending between the same, for the transmission of electric current, together with all necessary cross-arms, braces, anchors, wires, guys and other equipment over and across [the property]."

163. Why the Northern Pass Project Matters, supra note 15.
164. Jensen, supra note 5.
165. See id. (explaining that “the new towers will poke up above the trees destroying the view and . . . the property value”).
166. See Frances Glassner Lee, Easement Deed recorded in Grafton County Registry of Deeds, Book 822, Page 244 (June 17, 1952) [hereinafter Lee Easement Deed] (on file with author).
167. Jensen, supra note 5.
168. See Heartz, 808 A.2d at 81 (outlining the two-step rule of reason analysis in easement interpretation).
169. Id.
171. See Lee Easement Deed, supra note 166 (granting broad discretion to the grantee in the easement).
172. Id.
If the meaning of an easement is unclear, the New Hampshire courts will apply a “rule of reason” to give meaning to the easement deed’s language.\(^{173}\) The original intent of the grantor and grantee of the deed is particularly relevant.\(^{174}\) Although the PSNH deed seems clear, there may be room to argue that Northern Pass’ proposed use is unreasonable under the easement language.\(^{175}\) For example, in \textit{Nadeau}, the Supreme Court affirmed a trial court’s finding that a ROW, originally used as a driveway for a single-family home, could not be reasonably interpreted to serve as a driveway for a condominium complex parking lot.\(^{176}\) Factors in reaching that determination included the reasonable expectations of the parties and burdens on them \textit{at the time of the easement’s granting}.\(^{177}\) When the PSNH easements were granted, a landowner would not likely have foreseen a 130-foot metal transmission tower, since the original towers were 55 feet tall and made of wood.\(^{178}\) It is possible that, if a court were to determine that the language of a PSNH easement was ambiguous, evidence about the servient owner’s expectations would lead to a finding of unreasonableness similar to \textit{Nadeau}.\(^{179}\)

However, the PSNH easements seem to leave little doubt about the meaning of the original deed.\(^{180}\) If the language of an easement deed is clear and unambiguous, the court’s inquiry ends there, without needing to consider any extrinsic evidence.\(^{181}\) Based on New Hampshire Supreme Court precedent, a court would likely find the original PSNH easement language to be unambiguous.\(^{182}\) In \textit{Lussier}, the Court considered a power company’s ROW with language very similar to the PSNH easements.\(^{183}\) The Court found that the deed’s language explicitly authorized the construction of new transmission towers on the easement.\(^{184}\) It is likely that

\(^{173}\) \textit{Heartz}, 808 A.2d at 81.

\(^{174}\) See Flanagan v. Prudhomme, 644 A.2d 51, 56 (N.H. 1994) (stating how evidence of the parties’ intentions “may be used to clarify the terms of an ambiguous deed”).

\(^{175}\) See \textit{Nadeau}, 531 A.2d at 337–38 (illustrating how New Hampshire courts use the “rule of reason”).

\(^{176}\) \textit{Id.} at 336–37. The easement language only specified the width of the ROW, not its intended use.

\(^{177}\) \textit{Id.} at 338.

\(^{178}\) Jensen, supra note 5.

\(^{179}\) See \textit{Nadeau}, 531 A.2d at 338 (setting aside a proposed use of a right-of-way after considering the reasonable expectations of the parties relative to the right-of-way’s future use).

\(^{180}\) See \textit{Lussier}, 584 A.2d at 182 (noting that the deed’s language is clear and controlling);

\begin{itemize}
  \item \textit{Lee Easement Deed, supra note 166.}
  \item \textit{Lussier, supra note 166.}
  \item \textit{Id.} at 181–82 (explaining that New Hampshire precedent gives substantial deference to easement holders).
\end{itemize}

\(^{181}\) See \textit{id.} at 181 (explaining that the easement language in both deeds allows improvements to be implemented);

\(^{182}\) \textit{Lussier}, 584 A.2d at 182.
a New Hampshire court would follow this precedent and determine that adding towers and lines to the PSNH ROWs is a use within the scope of the easement’s language.  

2. Unreasonable Burden

Even if the New Hampshire courts determine that a proposed use is reasonable under the easement’s language, servient owners may still have recourse. No matter how clearly an easement may authorize a new use, that use may not create an unreasonable burden on the servient estate. The Restatement of Property acknowledges that although a certain amount of damage or harm may be expected on the part of the servient estate, damage may not rise to the level of unreasonableness. Again, the New Hampshire courts use the “rule of reason” to determine when a use becomes an unreasonable burden. It is a question of fact.

Northern Pass opponents could claim two logical unreasonable burdens. The first, and more tenuous, is that the oversized Northern Pass transmission towers could create unreasonable health risks. The stronger argument claims that the new transmission towers will cause an unreasonable burden by impermissibly lowering the property value of the servient estates.

Unreasonable burdens have been found in New Hampshire when the easement’s usage multiplies in scope, as is the case with the new, larger towers proposed by Northern Pass. In Crocker, an easement over the servient estate was originally used to convey sewage for a small summer inn. When the dominant estate began using the easement to serve a large

---

185. See id. at 181–82 (holding that additions to the transmission lines and electrical switching station were permitted under the terms of the deed due to the clearly expressed intent of the parties); Lee Easement Deed, supra note 166.

186. See Galloway, 2012 WL 2994737, at *4 (noting that an unfavorable outcome from New Hampshire courts does not mean all means of success for opposition to Northern Pass have been excluded).

187. See Heartz, 808 A.2d at 81 (noting that irrespective of the deed language, the rule is used to determine whether a particular use of the easement would be unreasonably burdensome).

188. RESTATMENT (THIRD) OF PROP.: SERVITUDES § 4.10 cmt. g. (2000).

189. Heartz, 808 A.2d at 81.

190. Id.

191. Jensen, supra note 5.

192. See id. (noting the court could rule in favor of the landowner if some downside were proven, for example, “adverse health effects from the increased voltage”).

193. See id. (explaining the potential for new transmission towers to leave significant impacts on property values as a possible argument for Northern Pass opponents).

194. See Nadeau, 531 A.2d at 336–38 (citing previous New Hampshire cases where unreasonable burdens have been found when the scope of the easement multiplies).

school with a much greater sewage flow, however, the Court determined that this was “an unwarranted additional and new burden” on the servient estate.\textsuperscript{196} Similarly, in \textit{Nadeau}, the Court found that “increased noise, traffic, and lighting . . . would diminish the [servient owner]’s use and quiet enjoyment of her property.”\textsuperscript{197} It stands to reason that if an increase in the volume of annoyances such as noise and light pollution is sufficient to create an unreasonable burden, perhaps a decrease in property value or increase in health hazards would also be sufficient.\textsuperscript{198}

Other jurisdictions lend support to that proposition.\textsuperscript{199} An Oklahoma Supreme Court case explicitly lists “decreased property value” as being a burden on the servient estate.\textsuperscript{200} Likewise, the Alabama Supreme Court has recognized property value decrease as a possible burden.\textsuperscript{201}

The Oklahoma Court also listed “increased noise and traffic or interference with the servient owner’s peace and enjoyment of the land,” the burden recognized by the New Hampshire Court in \textit{Nadeau}.\textsuperscript{202} Research shows that 300kV transmission lines such as the ones proposed by Northern Pass may create electrical noise or buzz as loud as 33 decibels in dry weather, with an increase of 15 to 30 decibels in humid weather.\textsuperscript{203} While this electrical noise could be characterized as “increased noise,” at its peak the additional noise would be only as loud as a normal conversation.\textsuperscript{204}

The two cases most factually similar to a theoretical Northern Pass lawsuit buttress the utility company’s position.\textsuperscript{205} In Vermont, a landowner sued an electric company after it replaced the wooden power poles on its ROW with newer, taller towers.\textsuperscript{206} The Vermont Supreme Court rejected the servient owner’s allegations of overburdening as conclusory and mere

\begin{flushleft}
\textsuperscript{196.} Id. at 847.
\textsuperscript{197.} \textit{Nadeau}, 531 A.2d at 338.
\textsuperscript{198.} See id. at 337 (describing how the Court can use all “surrounding circumstances” to determine reasonableness).
\textsuperscript{199.} See \textit{Weeks}, 941 So.2d at 272; \textit{Burkhart}, 976 P.2d at 1050 (providing cases that associate a decrease in property value or increase in health hazards with an unreasonable burden).
\textsuperscript{200.} \textit{Burkhart}, 976 P.2d at 1050.
\textsuperscript{201.} \textit{Weeks}, 941 So.2d at 272.
\textsuperscript{202.} \textit{Burkhart}, 976 P.2d at 1050; see \textit{Nadeau}, 531 A.2d at 338 (explaining the Court’s recognition of “increased noise, traffic, and lighting” as burdens).
\textsuperscript{204.} See \textit{Noise Sources and Their Effects}, PURDUE UNIV. – DEPT. OF CHEMISTRY, https://www.chem.purdue.edu/chemsafety/Training/PPETrain/dblevels.htm [http://perma.cc/8Y7U-NEA6] (last visited Mar. 30, 2014) (describing noise levels at specific decibels); see also \textit{Reimers ET AL., supra} note 203 (noting that the increased noise is not likely to amount to an unreasonable burden).
\textsuperscript{205.} See \textit{Lussier}, 584 A.2d at 182 (referencing a case factually similar to Northern Pass); \textit{Farrell}, 68 A.3d at 1117.
\textsuperscript{206.} \textit{Farrell}, 68 A.3d at 1112–14.
\end{flushleft}
speculation. Similarly, in the New Hampshire case of Lussier, the servient estate owners “made no allegations” of an unreasonable burden. Therefore, in both cases regarding an electric company’s alleged overburdening of an easement, the “complaining party fail[ed] to make sufficient factual allegations of unreasonable use or burden.” Theoretically, if a Northern Pass servient landowner were able to name specific burdens, supported by fact and not merely conclusory, an unreasonable burden might be found.

A single sentence in the New Hampshire Supreme Court case of Downing House does significant damage to opponents of Northern Pass. Citing a Washington state appeals court, the New Hampshire Supreme Court determined that if a new use of an easement is a “normal development from conditions existing at the time of the grant . . . the enlargement of a use is not considered to burden unreasonably the servient estate.” This sentence seems to pertain more to the interpretation of the easement’s language than it does to overburdening. Although the Downing House Court described the inquiry as a “question of fact,” indicating an overburdening analysis, the Court dwelled on the parties’ original intent, a factor relevant to interpretation of an easement but not an unreasonable burden inquiry.

Additionally, the Washington appellate court decision, the only authority cited by the Court in Downing House, also seems to be referring to interpretation rather than a separate overburdening inquiry. The Washington court’s analysis refers to the “intentions of the parties connected with the original creation of the easement,” a factor in

207. Id. at 1117.
208. Lussier, 584 A.2d at 182.
209. Heartz, 808 A.2d at 82; see Lussier, 584 A.2d at 182 (emphasizing conclusory statements that lack adequate factual allegations that a property will be damaged will not satisfy the reasonable burden standard); Farrell, 68 A.3d at 1117.
210. See Galloway, 2012 WL 2994737, at *4 (reinforcing that allegations of an unreasonable burden must be supported by fact and not merely conclusory).
211. Downing House, 531 A.2d at 865.
213. See id.; see also RESTATEMENT (THIRD) OF PROPERTY: SERVITUDES § 4.10 (2000) (noting that, although the reasonable use of an easement is expected to change over time, even a reasonable use may not create unreasonable burdens to a servient estate).
214. See Downing House, 497 A.2d at 865 (explaining the change of a use resulting from is normal development out of conditions in existence at the time of the grant, such as an increased volume of traffic, the enlargement of a use is not considered to unreasonably burden the servient estate); see also Heartz, 808 A.2d at 81 (stating that “[T]he parties’ intentions concerning the easement” are relevant to “interpret and give reasonable meaning to general or unclear terms in the” easement).
interpreting the easement’s scope. Furthermore, the Washington court’s main authority for its holding is a now-outdated section of the Restatement (First) of Property, which is properly applied only to interpretation, not overburdening analysis. In short, the damaging language in Downing House cited a case, which actually supported a separate principle: that in interpreting whether a proposed use is within an easement’s scope, a court should accommodate normal developments from conditions at the time of the granting. This is in line with the current Restatement. However, the Downing House language came to stand for a different proposition: that if a particular use was a “normal development” from the time of the easement’s creation, it was incontrovertibly permissible and could not be an unreasonable burden. Despite the incongruities in the Downing House decision, New Hampshire courts have relied upon it in their unreasonable burden analysis.

Even assuming a court would find the Northern Pass towers a “normal development from conditions existing at the time of the” original PSNH easement grants, the Downing House case is not necessarily the final word

216. Id.; see Arcidi v. Town of Rye, 846 A.2d 535, 543 (N.H. 2004) (citing Lussier, 584 A.2d at 181) (stating that to determine the “scope of the easement...[the Court’s] task is to determine the parties’ intent”).

217. Logan, 631 P.2d at 432 (“The law assumes parties to an easement contemplated a normal development under conditions which may be different from those existing at the time of the grant. Restatement, Property § 484 (1944); see also Cameron v. Barton, 272 S.W.2d 40, 41 (Ky. 1954).”). The cited Restatement section states that if an easement’s use is changed, an analysis of whether that use is reasonable should assume “that the parties to the conveyance contemplated a normal development of the [easement’s] use.” RESTATEMENT (FIRST) OF PROP. § 484 (1944) (emphasis added). Inquiries about intent are relevant only to the easement’s interpretation, not in determining whether a use unreasonably burdens the servient estate. See Heartz, 808 A.2d at 81. The current Restatement makes clear that although an easement’s “use may change over time to take advantage of developments in technology and to accommodate normal development of the dominant estate or enterprise benefited by the servitude...the [dominant estate] holder is not entitled to cause unreasonable damage to the servient estate.” RESTATEMENT (THIRD) OF PROP.: SERVITUDES § 4.10 (2000) (emphasis added). In addition to the Restatement, Logan also cites a state appellate decision from Kentucky, which clearly deals with the interpretation of an easement’s scope, not an unreasonable burden analysis. See Cameron v. Barton, 272 S.W.2d 40, 41 (Ky. 1954) (holding that “[A] normal change in the manner of using a passway does not constitute a deviation from the original grant...Such is the practical interpretation of the scope of the easement.”).

218. See Downing House, 531 A.2d at 865 (referencing cases that take into account accommodation of normal developments and conditions since the time easement was granted); Logan, 631 P.2d at 432; supra note 217 and accompanying text.

219. See RESTATEMENT (THIRD) OF PROP.: SERVITUDES § 4.10 (2000) (“The manner, frequency, and intensity of the use may change over time...to accommodate normal development[s].”).

220. See Bos. & Me. Corp., 861 A.2d at 787 (N.H. 2004) (citing Downing House, 497 A.2d 862) (finding an enlargement of use to be permissible); see also Downing House, 531 A.2d at 865 (distinguishing the Restatement and the court’s interpretation of “normal development”).

221. See, e.g., Bos. & Me. Corp., 861 A.2d at 787–88; Arcidi, 846 A.2d at 543; Heartz, 808 A.2d at 82 (citing examples in which New Hampshire courts have relied upon the reasoning of the Downing House decision).
for servient landowners. 222 Although the language seems definitive, it has not always been applied that way by the New Hampshire courts, further devaluing the case as precedent. 223 For example, the New Hampshire Supreme Court in Lussier, decided six years after Downing House in an opinion written by the same Justice, noted that “if the plaintiffs were able to prove that the addition of the third line would cause adverse health effects from the increased voltage, then the addition might well have been determined to be an unreasonable use of the easement.” 224 This possibility indicates that either: under the Downing House language, additions to transmissions lines are not “normal developments” under the easement; or, that even if a certain use is a normal evolution, a factual showing of negative effects on the servient property can still prove an unreasonable burden. 225 Either way, the Court in Lussier clearly speculated, in spite of Downing House, that a modification to transmission lines could indeed be an unreasonable burden. 226

In 2009, the New Hampshire Supreme Court further eroded the plain language of Downing House. 227 The case uses the “normal development” language from Downing House several times but comes to a different conclusion:

“An enlargement of use is permissible if the change of a use is a normal development from conditions existing at the time of the grant, such as an increased volume of traffic. The easement holder cannot, however, materially increase the burden of it upon the servient estate, nor impose a new or additional burden thereon.” 228

Therefore, the Court again recognized that even if a project (such as Northern Pass) is a “normal development” from the original easement, it still may not impose unreasonable burdens on the servient estate. 229 The Duxbury-Fox Court correctly interpreted Downing House’s “normal development” language to apply only to easement interpretation: a separate inquiry from unreasonable burden analysis. 230

222. See Duxbury-Fox v. Shakhnovich, 989 A.2d 246, 253 (N.H. 2009) (noting servient owners are not controlled by the Downing House decision); Lussier, 584 A.2d at 182.
223. See Duxbury-Fox, 989 A.2d at 253 (pointing out the Downing interpretation of “normal development” has not been applied consistently).
224. Lussier, 584 A.2d at 182.
225. Id.; Downing House, 531 A.2d at 865.
226. See Lussier, 584 A.2d at 182.
227. Duxbury-Fox, 989 A.2d at 253.
228. Id. (emphasis added) (citations omitted) (internal quotation marks omitted).
229. Id.
230. See supra notes 211–229 and accompanying text.
B. The Effect of Transmission Lines on Property Value

If the New Hampshire courts were to correctly interpret *Downing House* in a hypothetical lawsuit against Northern Pass, the plaintiffs would still need to prove that the proposed transmission towers would unreasonably burden their servient estates. A bare assertion or conclusory statement that a particular use will overburden is insufficient. The complaining party must make “sufficient factual allegations of unreasonable use or burden,” otherwise, the court will not engage in an unreasonable burden analysis.

Ultimately, the New Hampshire courts will only find an unreasonable burden when the change in use is “so substantial as to result in the creation” of an essentially different easement. To determine whether a use is an unreasonable burden, the courts consider “the surrounding circumstances, such as location and the use of the parties’ properties,” as well as the “advantages and disadvantages to each party.”

Common sense indicates that the presence of large 100-foot high-voltage transmission towers on a property would decrease its value, especially a property prized for its scenic beauty. However, harder evidence is necessary to prove an unreasonable burden. Anecdotal testimony is a start; many realtors in New Hampshire’s North Country attest that real estate value along Northern Pass’s proposed route has already fallen. Some claim that the proposed project has decreased some properties’ value by 25–50%.

231. *See Galloway*, 2012 WL 2994737, at *4 (explaining the other obstacles that stand in the way, even if *Downing* were interpreted properly).

232. *Id.*

233. *Heartz*, 808 A.2d at 82.


235. *Heartz*, 808 A.2d at 81.


237. *See Heartz*, 808 A.2d at 82 (holding that conclusory statements, which lack factual support that a property will be damaged does not satisfy the reasonable burden standard).


239. *Id.* In one example, a property estimated to be worth $400,000 received an offer of just $190,000. The prospective buyer wrote that his offer was low because of uncertainty regarding Northern Pass. *Id.* The two realtors quoted in this newspaper article are opponents of the project, but have extensive real estate experience. *Id.*
Northern Pass, of course, is quick to dismiss these accounts.\(^{240}\) The corporation’s literature states that “research suggest[s] that there are often no effects on property values [from transmission towers], or when there are effects, they are most often small.”\(^{241}\) To support their conclusion, Northern Pass cites several published reports on the impact of high-voltage transmission lines (“HVTL”) on property values.\(^{242}\) It should be noted that three of the reports cited by Northern Pass were themselves commissioned by the corporation.\(^{243}\)

A recent literature review, from a neutral source, of studies concerning HVTLs is somewhat inconclusive.\(^{244}\) The literature review synthesizes studies from the United Kingdom, New Zealand, and North America.\(^{245}\) In the United Kingdom, the authors found that “physical proximity and the visual presence of a pylon [tower] can have a significant and negative impact on value.”\(^{246}\)

The literature revealed 20% average decrease in property value when transmission towers were within 100 meters of a property.\(^{247}\) Specifically, the review found that houses with a view of the countryside had their property value “more negatively affected.”\(^{248}\) Property values in New Zealand were similarly negatively affected by 20% when 10–15 meters from a transmission tower.\(^{249}\)

In the United States, the impact of HVTLs is not as clear from the literature.\(^{250}\) A review of existing studies commissioned by Northern Pass found that “[t]he majority of the literature review . . . finds that High Voltage Transmission Lines (“HVTLs”) have a modest or no measurable impact on property values.”\(^{251}\) However, the 2013 book published by

\(^{240}\) Id.


\(^{242}\) Id.

\(^{243}\) Id.; see also Callahan, supra note 24 (noting three of the reports Northern Pass relies on were commissioned by the corporation itself).

\(^{244}\) See Sandy Bond et al., Towers, Turbines and Transmission Lines: Impacts on Property Value 116 (2013) (explaining that there seems to be no clear correlation between price and distance of the variables that may lead to price impacts from HVTL proximity).

\(^{245}\) See id. at 115–16 (describing research findings from various locations around the world).

\(^{246}\) Id. at 68.

\(^{247}\) Id.

\(^{248}\) Id. at 68–69.

\(^{249}\) Id. at 95.

\(^{250}\) See id. at 116 (describing how half a century of research on HVTLs on property values has produced mixed results in North America).

neutral authors was less conclusive, stating that there are “serious questions relating to the statistical quality of many of the earlier hedonic studies . . . [and] also the overriding issue that many of these ‘independent’ studies were not actually independent and have been financed by power line companies.”252 The authors go on to note that many of the studies are incompatible because variables such as location, population density, and sizes of towers are so diffuse.253 For example, although property value “diminution would be expected to vary according to the size of the power line and/or the height of the pylon towers,” the studies do not investigate a correlation.254

These studies may have limited applicability to the properties affected by Northern Pass.255 Most obviously, every study on property value investigates the mere presence of transmission towers: they do not correlate the impact with height.256 This is an issue because the landowners would need to show that the new, much larger towers would create a decrease in property value in comparison to the transmission installments already in place.257

Even Northern Pass literature points out that each property must be evaluated on a case-by-case basis to determine how it will be affected by transmission lines.258 In a hypothetical case against Northern Pass, the strongest way for servient landowners to demonstrate an unreasonable burden might be appraisals of the specific property in question, before and after the addition of the new HVTLs.259 In this vein, a homeowner in northern New Hampshire, whose property is located on one of Northern Pass’s proposed alternative routes, commissioned an independent

concludes that “[m]ost of the studies find that the measurable impact of an HVTL on value is generally less than 10 percent.” Id. at 3.

252. BOND, supra note 244, at 110.
253. See id. (explaining the lack of standard methodology for calculating the monetary impact of residential properties’ proximity to HVTLs is due in part to the fact that comparisons between studies are difficult to make because of the variety and complexity of each individual lot sale).
254. Id. at 111.
255. THIBEAULT, supra note 251; Jensen, supra note 236.
256. See BOND, supra note 244, at 111 (citing the lack of correlation between the impact of HVTL height in every study regarding property value).
257. See Jensen, supra note 5 (discussing the issues that arise because of studies’ failure to correlate HVTL height and property value).
258. See Property Value Impact, supra note 241 (discussing how property devaluation cannot be evaluated in the aggregate in regards to the effect of transmission lines).
259. See Jensen, supra note 236 (“Peter Powell, a Lancaster realtor, said it is hard in the North Country to prove the impact of something like Northern Pass because ‘you can’t find comparables for something that hasn’t happened yet.’ Other studies of the impact of high-voltage power lines are in areas that are not as pristine as the North Country, said Powell.”).
The study assumed that the HVTLs running over the property would be 90 to 135 feet high, “well above tree level.” The appraisal concluded that the property would lose between 52 and 91% of its value after the construction of HVTLs. The report also discounts the relevancy of existing literature on the subject, noting that in those studies, “most data was collected in areas of higher density residential development where a desirable view did not exist prior to the HVTL. This contrasts significantly with this assignment in that desirable views of mountains and other landscape features already exist and are valued.” However, while this appraisal does indicate a negative impact from Northern Pass, the property in question did not contain any prior transmission lines and again has limited applicability to an overburdening claim.

In any case, Northern Pass was quick to discredit the appraisal. The corporation again cited the existing literature on the subject, saying that it contradicted the appraisal. They also pointed to a previous report, commissioned by Northern Pass, which concluded that HVTLs “do not adversely impact property values.” The report, which examined just eight properties, has been criticized as flawed by academics and appraisers.

Ultimately, showing sufficient evidence of an unreasonable burden will be a tough task for landowners. The existing literature is either inconclusive or only marginally applicable. However, this does not necessarily indicate that legal action against Northern Pass would be futile.

---

260. Paula Tracy, Couple: Northern Pass Kills Land Value, N.H. UNION LEADER (Apr. 25, 2011), [http://perma.cc/9W4N-3H3X]. The certified appraisal was conducted by James Walker, president of White Mountain Appraisals. Id. The homeowners paid more than $10,000 for the appraisals. Id.
262. Id. at 61.
263. Id. at 47.
264. Id. at 61; Tracy, supra note 260; supra note 257 and accompanying text.
266. See Jensen, supra note 236.
267. Id.; see BRIAN C. UNDERWOOD, IMPACT ON VALUE OF HIGH VOLTAGE TRANSMISSION LINES: TOWNS OF DEERFIELD & LITTLETON 13 (2011) (evaluating HVTL’s effects on property values in Deerfield and Littleton).
268. See Property Value Impact, supra note 241 (detailing the effect on property value); W. Tod McGrath, a real estate lecturer at MIT, noted that comparing "equalized tax assessment of some properties with sale prices of others" to reach conclusions was a serious defect. Jensen, supra note 236.
269. See supra notes 236–268 and accompanying text.
270. See supra notes 236–268 and accompanying text.
271. Lussier, 584 A.2d at 182; Farrell, 68 A.3d at 1117.
decrease in property value because of the new, taller transmission towers, that may be sufficient to show an overburdening of the easement.272

CONCLUSION

Many of New Hampshire’s residents oppose the Northern Pass project for economic, aesthetic, and environmental reasons. Northern Pass plans to construct their proposed power lines on existing rights-of-way throughout the state. One legal option for landowners with properties burdened by the rights-of-way is to allege that the project’s proposed transmission towers would be an unreasonable burden compared to existing wooden power poles. Based on New Hampshire Supreme Court precedent, the success of such a claim would depend on several factors. For one, the courts would need to correctly interpret the meaning of the Downing House case and avoid summarily dismissing the overburdening claim simply because the new transmission towers are a “normal development” of technology. Second, the landowners would need to show concrete evidence that the project would create an unreasonable burden on their property, likely through convincing evidence of a major decrease in property value. Ultimately, this legal argument may be just one item in the tool belt used to halt Northern Pass along with other litigation, political and regulatory roadblocks, and pressure from public opinion.

272. See Lussier, 584 A.2d at 182; Farrell, 68 A.3d at 1117 (showing a substantial decrease in property value attributable to new transmission towers is an effective way to prove unreasonable burden).