

## HANDBOOK ON REDUCING CHEMICAL FOOTPRINTS

### Chapter 7. Regulation

Tens of thousands of chemicals are in broad commercial use in the US today with only a fraction strictly regulated. Contaminants of emerging concern (CECs) are among the majority of chemicals that are not subject to specific regulatory rules, despite growing evidence of negative human and environmental health impacts. The presence of CECs in many common personal care and household products provides opportunities for these chemicals to enter the environment and expose humans to their negative effects. Established water treatment methods do not monitor or effectively remove many chemicals of concern, and many have been found in drinking water and surface water samples.



Why not adopt new regulations to ensure that these chemicals are subject to limits? This chapter explores this question, looking at the prospects for adopting new regulations to control the production, application, release, and treatment of currently unregulated chemicals of concern. The discussion begins with an overview of regulation and public opinion polling results that show strong citizen interest in regulatory protection. The focus then turns to basic challenges to establishing new rules to address precautionary concerns, particularly within an existing regulatory framework that generally waits for “proof of harm” before action is justified. Recent developments in regulatory control by the US government, individual states, and other countries are also considered.

#### What is Regulation?

Regulations are legally enforceable rules and restrictions typically carried out by government agencies. Regulations are designed to control, direct, or manage the activities of individuals or groups in society. For example, environmental regulations limit private sector activities that might cause harm to the environment. At the US national level, regulatory policy begins with the US Congress enacting a broad protective statute (such as the Clean Water Act), followed by federal agencies (such as the Environmental Protection Agency) developing specific rules to implement and give meaning to the law. Regulations are adopted to achieve outcomes (such as environmental cleanup) that might not otherwise occur.



Regulatory policy tends to focus on detailed technical issues. While citizens are often unaware of ongoing regulatory decisions, we live in a highly regulated world. There are regulations that set standards for drinking water quality, and others for establishing chemical limits for certain household cleaning products; there are many overlapping rules for how chemicals are produced, transported and disposed. The water treatment practices discussed in Chapter 6 are all governed by regulatory rules adopted in response to mandates established by Congress under the Safe Drinking Water Act, the Clean Water Act, and related amendments.

## The Regulatory Challenge: Balancing Between Precautionary and Economic Interests

In a 2018 environmental survey of Americans conducted by the Gallup polling organization, 82 percent said they were worried about pollution of drinking water (59 percent saying they worry “a great deal” about the issue, and an additional 23 percent worried “a fair amount”).<sup>1</sup> Of the six environmental issues included in the 2018 poll, the three water-related issues raised the highest levels of concern. In addition to drinking water quality, the poll showed that Americans are concerned about pollution of rivers, lakes and reservoirs (83 percent either concerned “a great deal” or “a fair amount”); and 77 percent are similarly concerned about both water and soil contamination from toxic waste and maintenance of the nation’s supply of fresh water for household needs (from a 2014 polling).<sup>2</sup>

**82% of Americans  
are worried about  
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water.**

Gallup poll 2018

Results such as these suggest a strong interest in water contamination. Still, Americans are interested in many other things as well. For example, economic growth is sometimes prioritized over the environment in polling results. Gallup found that “in all but one survey conducted between 2009 and 2013, during the recovery from the Great Recession, Americans favored the economic growth option.”<sup>3</sup> However, Gallup has found that in 30 years of asking (1984-2014), “Americans have almost always chosen the environment over economic growth as a priority.”<sup>4 5</sup> In 2018, the Gallup numbers have moved even further toward environmental protection: 57 percent agree that protection of the environment should be given priority, even at the risk of curbing economic growth. Only 35 percent agree that economic growth should be given priority, even if the environment suffers to some extent.<sup>6</sup>

However, expressing an interest in environmental protection does not necessarily mean support for regulation. In a 2018 Pew Research Center poll, “...Americans are closely divided (52 [percent in favor] to 48 [percent not in favor]) over whether or not it is possible to cut back on

<sup>1</sup>“Environment,” *Gallup Politics*, Gallup Inc., March 2018. <https://news.gallup.com/poll/1615/environment.aspx>.

<sup>2</sup> Ibid.

<sup>3</sup> Newport, Frank. “Americans Want Government to Do More on Environment.” *Gallup Politics*, Gallup Inc., March 29, 2018. [https://news.gallup.com/poll/232007/americans-want-government-more-environment.aspx?g\\_source=link\\_NEWSV9&g\\_medium=TOPIC&g\\_campaign=item\\_&g\\_content=Americans%2520Want%2520Government%2520to%2520Do%2520More%2520on%2520Environment](https://news.gallup.com/poll/232007/americans-want-government-more-environment.aspx?g_source=link_NEWSV9&g_medium=TOPIC&g_campaign=item_&g_content=Americans%2520Want%2520Government%2520to%2520Do%2520More%2520on%2520Environment).

<sup>4</sup> Swift, Art. “Americans Again Pick Environment Over Economic Growth.” *Gallup Politics*, Gallup Inc., March 20, 2014. [www.gallup.com/poll/168017/americans-again-pick-environment-economic-growth.aspx](http://www.gallup.com/poll/168017/americans-again-pick-environment-economic-growth.aspx).

<sup>5</sup> Ibid

<sup>6</sup> Newport, Frank. “Americans Want Government to Do More on Environment.” *Gallup Politics*, Gallup Inc., March 29, 2018. <https://news.gallup.com/poll/1615/environment.aspx>.

regulations while still effectively protecting air and water quality.”<sup>7</sup> In the same study, Pew found that a majority of Americans (69 percent) think the federal government “is doing too little to protect key aspects of the environment including water...”<sup>8</sup> The Pew Research Center also found in a 2012 study, “more Americans say that government regulation of business is harmful than say it is necessary to protect the public.”<sup>9</sup> However, Pew also found that, “Overall, the public overwhelmingly supports strengthening regulations or keeping them as they are in specific areas, such as food safety and environmental protection.”<sup>10</sup>

The desire for precautionary protections while ensuring maximum economic liberties represents a fundamental tension in American society that affects the nature of regulatory development. How do we strike a balance between the deeply rooted commitment to economic liberty and the desire by many to achieve greater levels of environmental protection through government regulation? This is one of the most difficult balancing acts of modern societies. Chemicals in countless consumer products bring this challenge into focus. People want new and improved formulas promising to make life easier and more pleasant. We also enjoy the freedom to choose the products that best serve our interests even though some of these might pose unintended harm.

**Risk assessments** done in the US review potentially toxic substances to determine whether regulations are necessary. The risk assessment process draws on existing scientific information to assess the likelihood of adverse consequences of exposure to an environmental hazard. However, gaps in scientific knowledge make it difficult to draw specific conclusions. Many chemical substances subject to review have a very short history of use, not allowing for the assessment of possible long-term consequences of exposure. Furthermore, the available science record is often based on limited and controlled laboratory experiments, which do not mimic actual exposure circumstances. Among other things, humans and the environment are exposed to multiple chemicals through multiple pathways that accumulate at different rates and interact in countless ways.

It is important that science is at the foundation of the decision-making process with respect to complex matters of science. However, existing regulatory policy reflects a particular bias in how science is used. The decision point has been set at proof: If science proves that a substance is unsafe, then the government will step in to remove that harmful substance. Proof is a very high bar. Lacking incontrovertible proof that substances cause harm, the US regulatory approach opens the door to widespread application of chemical products, even those that raise suspicions. Suspicion is not proof.

The Toxic Substances Control Act (TSCA), enacted in 1976, provides good insight in this regard. As noted in Chapter 2, TSCA regulates new and existing chemicals. When enacted, it

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<sup>7</sup> “Majorities See Government Efforts to Protect the Environment as Insufficient.” *Pew Research Center*. May 14, 2018. [www.pewinternet.org/2018/05/14/majorities-see-government-efforts-to-protect-the-environment-as-insufficient/](http://www.pewinternet.org/2018/05/14/majorities-see-government-efforts-to-protect-the-environment-as-insufficient/).

<sup>8</sup> Ibid.

<sup>9</sup> Pew Research Center. “Auto Bailout Now Backed, Stimulus Divisive,” Section 2: “Views of Government Regulation,” *Pew Research Center for the People and the Press*. February 23, 2012. [www.people-press.org/2012/02/23/section-2-views-of-government-regulation/](http://www.people-press.org/2012/02/23/section-2-views-of-government-regulation/).

<sup>10</sup> Ibid.

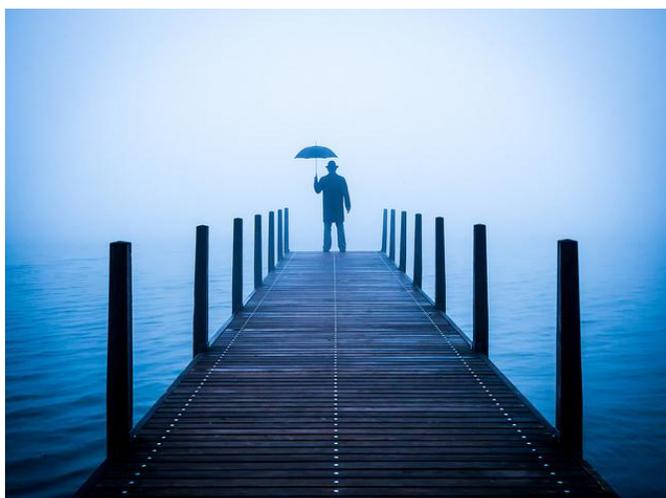
grandfathered in most chemicals already in commercial use – approximately 60,000 in 1976. This means that only those chemicals adopted since 1976 (more than 24,000 new chemicals) have been subject to basic risk assessment, and these procedures involve little more than submission of available data. Since TSCA was implemented, the EPA has required more complete testing of only about 200 of the approximately 60,000 chemicals that were in use in 1976. The vast majority of existing chemicals have never been subject to thorough review. Regarding new chemicals, the US EPA does not require that applications for commercial release include comprehensive analysis or test data regarding public health or environmental effects (such as toxicity or ecological damage), and instead relies on applicants reporting available information. Studies of chemical effects are generally considered proprietary information by the company petitioning for use of the chemical and are not available to the public.<sup>11</sup>

**Risk Assessment**  
**Allow use**  
**until *harm***  
**proven**

**Precautionary**  
**principle**  
**Limit use**

The basic assumption built into the US risk assessment review process is that chemicals in use are presumed safe unless proven otherwise. Or, as some like to say, we have adopted an “innocent until proven guilty” approach to chemicals.

**The precautionary principle** presents an alternative approach to the review of potentially toxic chemicals favored by many. Precaution asserts, “Look before you leap.” This approach also uses science as the arbiter in the face of uncertainty, looking to scientific evidence as the basis for



Leuthard, Thomas. “Opportunity is often delivered in a fog of uncertainty.” 2016. [www.flickr.com/photos/thomasleuthard/31155135274](http://www.flickr.com/photos/thomasleuthard/31155135274)

decision-making. However, instead of proving harm (as above, under risk assessment), a precautionary approach looks for science to demonstrate (or prove) that a substance is *not* harmful. The decision point: If science can prove that the chemical does not cause harm, then it can be released without restriction. As noted above, proof is a very high bar. If a substance cannot be proven harmless, then that substance is restricted. Suspicion can shut the door to the release of new substances until science has proven harmlessness when using the precautionary principle.

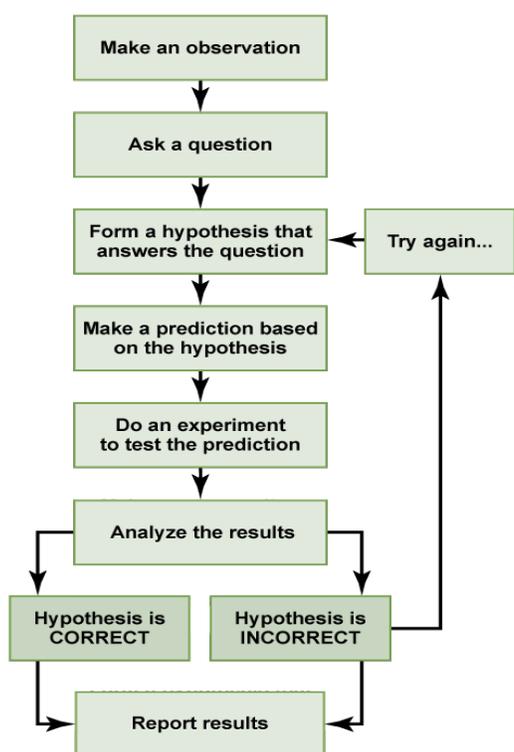
The European Union (EU) has adopted a more precautionary approach to the review of chemicals and thus has applied restrictions to many more chemicals than the US. To compare these approaches, it is valuable to compare

<sup>11</sup> US EPA. “TSCA Chemical Substance Inventory: Basic Information.” last updated on March 13, 2014. [www.epa.gov/oppt/existingchemicals/pubs/tscainventory/basic.html#background](http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/basic.html#background).

equivalent organizations adopted in each context to control chemical substances: TSCA in the US and REACH (Regulation on Registration, Evaluation, Authorization and Restriction of Chemicals), the chemical review program enacted by the European Commission in 2007.<sup>12</sup> TSCA places the burden of proof on EPA to demonstrate that a chemical poses a risk to human health or the environment before EPA can regulate its production or use. REACH in the EU generally places the burden of proof on chemical companies to ensure that chemicals do not pose such risks or that measures are identified for handling chemicals safely.

While there are many who would opt for a more precautionary approach in the face of uncertainty, the US political framework poses a very high hurdle at the national level to adopting new regulatory limits. At its constitutional roots, the US is a nation wary of government interference. Those who have gained from a system designed to protect maximum economic liberty are not inclined to shift towards support for increased direct regulation of chemicals in the US.

### Other Obstacles to Adopting New Regulations for Controlling Chemicals of Concern



“Biology.” 2016.  
[https://cnx.org/contents/GFy\\_h8cu@10.53:agVo2CPX@12/The-Science-of-Biology](https://cnx.org/contents/GFy_h8cu@10.53:agVo2CPX@12/The-Science-of-Biology)

The US preference for minimizing regulatory restrictions to protect economic liberty and flexibility acts as a fundamental limit to expanding rules to cover new contaminants. However, this preference is not the only factor standing in the way of new regulation. Enactment of numerous and expansive environmental protection laws and related administrative regulations to implement new restrictions in the 1970s came about despite those basic interests focused on protecting economic liberty. Other obstacles to the adoption of new regulations include limits posed by science, technology, costs, and politics.

Science is typically a slow process. There are many in the scientific community who are already investigating the kinds of questions that have been raised in this report. It takes a lot of time to set up, carry out, and analyze the results from a well-designed research plan. The research questions are variable and complex. They range from tracking which contaminants can be found where and how they are changed as they move through the environment, to what public health and ecological effects we should anticipate as these chemicals appear, accumulate, and interact with other substances. Until the research is done and uncertainty has been dispensed, scientists shy away from taking positions and advocating for a particular

policy response. Many others involved in reviewing policy options look to the scientific

<sup>12</sup> European Commission, Growth: Internal Market, Industry, Entrepreneurship and SMEs. “Chemicals Legislation.” last updated Feb. 27, 2015. [http://ec.europa.eu/growth/sectors/chemicals/legislation/index\\_en.htm](http://ec.europa.eu/growth/sectors/chemicals/legislation/index_en.htm).



proven safe and effective by manufacturers<sup>14</sup>. The EPA is responsible for the usage of triclosan in pesticides, whereas the FDA has stated that triclosan's presence in consumer over-the-counter products "raises potential concerns for the effects of use in humans" after reviewing animal studies previously performed. The FDA stated that because triclosan has been added to several other products, such as kitchenware, furniture, and clothing, its long-term exposure to humans may have negative effects.<sup>15</sup> This shows us that the EPA and FDA have made progress in setting some standards for specific chemicals, only with ongoing scientific evidence and their acknowledgment of unknown long-term effects.

A systematic process is in place for assessing and setting new drinking water standards, as needed, established under the Contaminant Candidate List (CCL) process for new regulatory determinations stemming from the Safe Drinking Water Act. The process requires the EPA to publish every five years a list of contaminants under consideration for new drinking water regulation.<sup>16</sup> The EPA has reviewed the fourth list of candidate contaminants (CCL4), which was

ENVIRONMENTAL PROTECTION AGENCY  
40 CFR Part 141  
[EPA-HQ-OW-2012-0155; FRL-9940-64-OW]  
Announcement of Final Regulatory Determinations for Contaminants on the Third Drinking Water Contaminant Candidate List  
AGENCY: Environmental Protection Agency (EPA).  
ACTION: Final regulatory determinations.

View the full CCL3 at [www.govinfo.gov/content/pkg/FR-2016-01-04/html/2015-32760.htm](http://www.govinfo.gov/content/pkg/FR-2016-01-04/html/2015-32760.htm)

published in 2016. CCL4 includes 97 chemicals or chemical groups for review, including pesticides, disinfection byproducts, chemicals used in commerce, waterborne pathogens, pharmaceuticals, and biological toxins.<sup>17</sup> Public water utilities are instrumental in the review process as they collect and report occurrence data.<sup>18</sup> The process requires that the EPA make

regulatory determinations on only five contaminants on any CCL. The preliminary regulatory determination for the former CCL, CCL3, proposed drinking water regulation for just one of the listed contaminants (strontium), while four would not be subject to regulation (dimethoate, 1,3-dinitrobenzene, terbufos, and terbufos sulfone).<sup>19</sup>

With few exceptions, chemicals of concern have not been raised as a topic for active legislative discussion in Congress. Authority for identifying contaminants requiring regulation has already been granted to the EPA and other administrative authorities through existing laws. However,

<sup>14</sup> U.S. Food and Drug Administration. "Antibacterial Soap? You Can Skip It, Use Plain Soap and Water." Sept. 2, 2016. [www.fda.gov/ForConsumers/ConsumerUpdates/ucm378393.htm](http://www.fda.gov/ForConsumers/ConsumerUpdates/ucm378393.htm).

<sup>15</sup> Ibid.

<sup>16</sup> Beauvais, J. "Drinking water contaminant candidate list 4-final." *The Daily Journal of the United States Government*, 81099-81114. [www.federalregister.gov/d/2016-27667](http://www.federalregister.gov/d/2016-27667).

<sup>17</sup> Ibid.

<sup>18</sup> US EPA, Office of Water. "Unregulated Contaminant Monitoring Rule 3 (UCMR 3)." updated July 15, 2013. <http://water.epa.gov/lawsregs/rulesregs/sdwa/ucmr/ucmr3/>.

<sup>19</sup> US EPA, Contaminant Candidate List (CCL) and Regulatory Determination. "Regulatory Determination 3." updated November 18, 2014. [www2.epa.gov/ccl/regulatory-determination-3](http://www2.epa.gov/ccl/regulatory-determination-3).

BPA has been the subject of legislation introduced multiple times over the past several years, including the Ban Poisonous Additives (BPA) Act of 2016.<sup>20</sup> Other bills have been introduced in recent years pushing for greater regulation of substances found in drinking water such as arsenic, lead, perchlorate and radium 224.<sup>21</sup> An issue of current concern, particularly to members who represent districts abutting Lake Erie, is the presence of toxic microcystins produced by cyanobacteria blooms in the drinking water supply.<sup>22</sup>

In summary, Congress and the administration are moving slowly at adopting new measures to address currently unregulated chemicals of concern.

**State-level regulatory action.** Though still not comprehensive or universal, states have achieved some surprising regulatory results with respect to both personal care and household products containing chemicals of concern by emphasizing “green chemistry” or, in other words, safe chemicals. In 2014, Minnesota became the first state to ban the use of the antibacterial substance triclosan in most consumer products, effective in 2017.<sup>23</sup> Several other states also considered (but were not successful) legislative triclosan bans in 2014, including Iowa, Michigan, and New York, before the federal ban, effective in 2017. BPA restrictions were enacted by eleven states as of 2012. PBDE (polybrominated diphenyl ethers) flame-retardants are subject to regulation in certain consumer products in twelve states and the District of Columbia.<sup>24</sup> Several states have also adopted laws requiring biomonitoring (monitoring the presence and concentration of various chemicals in state residents) and promoting green chemistry (designing chemical products and processes that reduce or eliminate the generation of hazardous substances).<sup>25</sup>

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<sup>20</sup> This bill that would have prohibited the distribution of foods in BPA-containing packages was introduced in the 114<sup>th</sup> Congress in the Senate (S 2572, by Sen. Edward Markey, Dem. of Mass.). GovTrack.us. (2018). S. 3412 – 114th Congress: Ban Poisonous Additives Act of 2016. [www.govtrack.us/congress/bills/114/s3412](http://www.govtrack.us/congress/bills/114/s3412).

<sup>21</sup> Arsenic in drinking water was the subject of HR 1252 and HR 2112, both introduced in the 107<sup>th</sup> Congress (2001); lead found in the water supply was the focus of S 2377, introduced in the 108<sup>th</sup> Congress (2004); HR 213 focused on perchlorate (2005); and HR 2665 focused on radium 224 (1999). None of these bills was enacted into law.

<sup>22</sup> Several bills have been introduced in 2015 (114<sup>th</sup> Congress) to address microcystins, including HR 212, HR 243, S 460, and S 462.

<sup>23</sup> The new Minnesota law bans the retail sale of any cleaning product that contains triclosan and is used for sanitizing or hand and body cleansing, effective January 1, 2017. See: Rhodan, Maya. “Minnesota Bans Antibacterial Triclosan.” *Time*. May 19, 2014. <http://time.com/105552/triclosan-anti-bacterial-minnesota-ban/>.

<sup>24</sup> National Conference of State Legislatures. “State Regulation of Flame Retardants in Consumer Products.” updated February 2015 [www.ncsl.org/research/environment-and-natural-resources/flame-retardants-in-consumer-products.aspx](http://www.ncsl.org/research/environment-and-natural-resources/flame-retardants-in-consumer-products.aspx).

<sup>25</sup> National Conference of State Legislatures. “Toxic Substances Control Act Reform.” May 19, 2014, [www.ncsl.org/research/environment-and-natural-resources/state-chemical-statutes.aspx#4](http://www.ncsl.org/research/environment-and-natural-resources/state-chemical-statutes.aspx#4).

Colorado is one of 21 states that authorizes state officials to declare any substance or mixture of substances that meets certain requirements to be a hazardous substance. Colorado law requires labeling of hazardous substances and recognizes state authority to ban the sale or distribution of hazardous substances.<sup>26</sup> Colorado has also adopted a “green cleaning and procurement” policy which directs state agencies to promote environmentally sustainable practices throughout state government, including the use of environmentally preferable products.<sup>27</sup>

Many constituents see state legislatures as the new front line in addressing chemicals of concern<sup>28</sup>, particularly in light of the failure of the 113<sup>th</sup> Congress to take any action to update the Toxic Substances Control Act (TSCA) when public interest was focused on this law following high profile chemical spills.<sup>29</sup> State legislatures that have taken steps to address chemical concerns are not eager to have federal lawmakers enact policy that defeats new state laws. This concern was made very clear when the US Congress considered updates to TSCA in 2014. The National Conference of State Legislatures (NCSL) argued:

“In the absence of federal action to address issues related to TSCA implementation, many state legislatures have enacted legislation to regulate individual chemicals. From Maine to California, states have enacted laws to protect their population from hazardous

**List of states with BPA restrictions (2012).**

**California  
Connecticut  
Delaware  
Maine  
Maryland  
Massachusetts  
Minnesota  
New York  
Washington  
Wisconsin  
Vermont**

**\*These restrictions banned BPA from products like baby bottles, sippy cups, infant formula containers, receipt paper, and reusable food and beverage products.**

<sup>26</sup> Ibid. The Colorado law giving state authority to regulate hazardous substances was adopted as the Colorado Hazardous Substances Act of 1973, revised in 2008, as Colo. Rev. Stat. §§ 25-5-501-25-5-512 (2008).

<sup>27</sup> State of Colorado, Department of Personnel and Administration, State Purchasing Office. “State of Colorado Environmentally Preferable Purchasing Policy.” July 1, 2010. [www.colorado.gov/pacific/sites/default/files/EPP%20Policy.pdf](http://www.colorado.gov/pacific/sites/default/files/EPP%20Policy.pdf).

<sup>28</sup> See, for example, Law360. “States Will Lead the Way on Chemical Regulations in 2015.” New York: December 23, 2014. [www.law360.com/articles/606788/states-will-lead-the-way-on-chemical-regulations-in-2015](http://www.law360.com/articles/606788/states-will-lead-the-way-on-chemical-regulations-in-2015).

<sup>29</sup> For example, the January 2014 chemical spill on the Elk River in West Virginia that rendered the public drinking water supply unusable for hundreds of thousands of users for days. As Bloomberg reporter Eric Chemi notes, the West Virginia spill was just one more among thousands of chemical spills reported by the US media every year. A review of the EPA’s Toxics Release Inventory showed that in 2011 alone, “1,374 different facilities were involved in leaking 287 chemicals, for a total of 194 million pounds of chemicals released.” Over the period 2001 to 2010, Chemi found that “there were 992 oil and gas fluid spills in three Colorado counties alone.” See: Chemi, Eric. “Forget West Virginia. Chemical Spills are an American Tradition.” Bloomberg. January 22, 2014. [www.bloomberg.com/bw/articles/2014-01-22/forget-west-virginia-dot-chemical-spills-are-an-american-tradition](http://www.bloomberg.com/bw/articles/2014-01-22/forget-west-virginia-dot-chemical-spills-are-an-american-tradition).

chemicals ... This is important work that should not be nullified by federalizing all toxic chemical regulation.”<sup>30</sup>



Roeder, Phil. "Hurdles." 2011. [www.flickr.com/photos/tabor-roeder/5835126514](http://www.flickr.com/photos/tabor-roeder/5835126514)

NCSL has identified many state-level laws enacted to regulate and control the use of toxic chemicals.<sup>31</sup>

State-level interest and action is notable. It is likely, however, that states will encounter many of the same roadblocks to action that exist at the national level, including economic interests opposing new restrictions, science, technology, cost and

political factors. Some states will manage to overcome such hurdles; others will not.

**Regulatory restrictions on chemicals of concern in other countries.** The US lags behind many other countries in restricting chemicals of concern. The European Union has banned far more chemicals than has the US.<sup>32</sup> The EU has the REACH program that aims to improve environmental and human health through better and earlier identification of chemicals of concern. The US does not have any program at the national level like REACH. Among many other chemical substances, the EU prohibits the use of formaldehyde and a wide range of parabens in cosmetic products, use of the surfactant nonylphenol, and applications of atrazine, an herbicide commonly used in US home gardens. BHA and BHT, used as food preservatives in the US, are banned in the United Kingdom, Japan, and many other European countries (though not in the EU as a whole).<sup>33</sup>

It is not likely that the US would use examples such as these from other countries to guide similar decisions. As discussed above, the US favors a system based on scientific certainty that argues against any measure that might hinder economic growth and innovation until harm can be proven. Unlike the US, the EU has endorsed a very different approach to decision making in the face of scientific uncertainty. Under the precautionary principle, where there is substantial

<sup>30</sup> Bruce Starr, Oregon State Senator and President, National Conference of State Legislatures (NCSL), letter to Rep. John Shimkus, Chair, and Rep. Paul Tonko, Ranking Member, US House Environment and the Economy Subcommittee, March 10, 2014. [www.ncsl.org/documents/standcomm/scnri/cica\\_letter.pdf](http://www.ncsl.org/documents/standcomm/scnri/cica_letter.pdf).

<sup>31</sup> Condon, Melanie. "Toxic Substances Control Act Reform." National Conference of State Legislatures. May 19, 2014. [www.ncsl.org/research/environment-and-natural-resources/state-chemical-statutes.aspx](http://www.ncsl.org/research/environment-and-natural-resources/state-chemical-statutes.aspx).

<sup>32</sup> EU, European Chemicals Agency (ECHA), Regulations. "List of Chemicals: Annex I." <http://echa.europa.eu/regulations/prior-informed-consent/list-chemicals>. See also the EU list of 1,377 "Substances Prohibited in Cosmetic Products," European Commission, Health and Consumers [http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.results&annex\\_v2=II&search](http://ec.europa.eu/consumers/cosmetics/cosing/index.cfm?fuseaction=search.results&annex_v2=II&search).

<sup>33</sup> Calton, Jayson and Calton, Mira. "8 Additives from the US that are Banned in Other Countries." *Food Matters*. June 24, 2013. <http://foodmatters.tv/articles-1/8-additives-from-the-us-that-are-banned-in-other-countries>.

evidence of danger to human health or the environment, protective action is seen as necessary even if the science is not complete.<sup>34</sup>

## Summary

Why not adopt new regulations to limit the use of chemicals of concern? The US has enacted numerous regulations to protect against environmental threats, and public opinion polling results demonstrate general support for such protective measures. Polling data also show that Americans are concerned about water quality, despite regulations already in place. Still, the prospects for regulating contaminants of emerging concern are limited. Under existing US **risk assessment** methods, regulators generally wait for “proof of harm” before new limits are applied. This approach is in stark contrast to the alternative **precautionary principle**, embraced by some governments (including in the EU) that support regulatory restriction until a chemical can be proven safe. Other factors influence regulatory decisions as well, including the long process of scientific research, the complexities and expense in developing technological alternatives, the often-prohibitive costs associated with regulation, and disagreement inherent in politics. Despite such obstacles, some contaminants of concern have been subject to new regulatory control, especially by states and other countries. However, most human and ecological communities remain unprotected against chemicals of concern, with little hope of gaining formal regulatory restrictions.



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<sup>34</sup> European Commission. “Communication from the Commission on the Precautionary Principle.” Brussels, February 2, 2000 [COM (2000) 1]. [http://ec.europa.eu/dgs/health\\_consumer/library/pub/pub07\\_en.pdf](http://ec.europa.eu/dgs/health_consumer/library/pub/pub07_en.pdf). As the EC explains in a related press release, “The Communication underlines that the precautionary principle forms part of a structured approach to the analysis of risk, as well as being relevant to risk management. It covers cases where scientific evidence is insufficient, inconclusive, or uncertain and preliminary scientific evaluation indicates that there are reasonable grounds for concern that the potentially dangerous effects on the environment, human, animal, or plant health may be inconsistent with the high level of protection chosen by the EU.” EC, Press Release Data Base. “Commission Adopts Communication on Precautionary Principle.” Brussels. February 2, 2000. IP/00/96; available at [http://europa.eu/rapid/press-release\\_IP-00-96\\_en.htm](http://europa.eu/rapid/press-release_IP-00-96_en.htm).

