



recommendations for those programs. It promised to include them in the next quarterly report or a special, non-statutorily required report to be submitted prior to the October 2017 report.

The Panel devoted portions of its June 14, August 9, and September 11, 2017 meetings to DTSC's source reduction and consumer products activities. DTSC provided the Panel with presentations on both subjects, and stakeholders also made presentations and submitted written and verbal comments. In addition, the IRP had access to response information from a survey it took of a small cohort of stakeholders about DTSC programs in August 2016.

Using the information gathered, this report therefore summarizes DTSC's source reduction and consumer products programs and, for each, offers recommendations for the Governor and Legislature, recommendations for DTSC, and suggested performance metrics.

## **Source Reduction and Consumer Products Summary**

The statutes pertaining to hazardous waste source reduction and toxic chemicals in consumer products in California are generally located in Article 11.9 and Article 14 of Chapter 6.5, Division 20, of the HSC. Article 11.9 is the Pollution Prevention and Hazardous Waste Source Reduction and Management Review Act. Article 14 is devoted to Green Chemistry. However, there are other articles in Chapter 6.5 that pertain to source reduction and/or consumer products, such as: Article 10.02, Lighting Toxics Reduction; Article 10.1.1, Metal Containing Jewelry; Article 10.2.1, Mercury-Added Thermostats, Relays, Switches, and Measuring Devices; Article 10.3, Electronic Waste; Article 10.4, Toxics in Packaging Prevention Act; Article 10.5, The Lead-Acid Battery Recycling Act of 2016; Article 10.5.1, Lead Wheel Weights; and Article 13.5, Motor Vehicle Brake Friction Materials.

DTSC's source reduction and consumer products programs are generally of more recent creation than the Department's other core programs, such as the Hazardous Waste Management Program and the Brownfields & Environmental Restoration Program, and have undergone more changes in recent years.

### **Hazardous Waste Management Plans**

The roots of DTSC's source reduction program go back to AB 2948 (Chapter 1504, Statutes of 1986), which required the Toxic Substances Control Program of the Department of Health Services (DTSC's predecessor agency) to prepare and adopt a state hazardous waste management plan in conjunction with hazardous waste management plans adopted by counties and regional councils of governments. The statewide plan was never completed for a variety of reasons, but lessons learned from the implementation attempts formed the basis for significant policy changes. Whereas the AB 2948 planning process was intended to facilitate the siting of new hazardous waste facilities to ensure that California possessed adequate capacity, the failure of the process, along with continuing concerns about the insufficient number of hazardous waste incinerators and the inability to site new facilities, forced the development of strategies to reduce the amount of hazardous wastes generated.

### **Hazardous Waste Source Reduction and Management Review Act**

The result was the Hazardous Waste Source Reduction and Management Review Act of 1989. It required facilities that generate more than 12,000 kilograms of hazardous waste a year to prepare a source reduction review and plan as well as a hazardous waste management performance report every four years. It required DTSC to select two categories of generators by SIC Code every two years and review their plans to determine if they were prepared properly. DTSC also was required to disseminate information about source reduction and other hazardous waste management approaches to hazardous waste generators for their consideration and possible use. The act defined source reduction as one of the following: (1) an action that causes a net reduction in the generation of hazardous waste; or (2) an action taken before the hazardous waste is generated that results in a lessening of the properties that cause it to be classified as a hazardous waste. By definition, source reduction did not include: (1) actions taken after a hazardous waste is generated; (2) actions that merely concentrate the constituents of a hazardous waste to reduce its volume or that dilute the waste to reduce its hazardous characteristics; (3) actions that merely shift hazardous wastes from one environmental medium to another environmental medium; or (4) treatment.

SB 1916 (Chapter 881, Statutes of 1998) amended the act nine years later. It sought to expand the state's hazardous waste source reduction activities beyond those directly associated with evaluation reviews and plans, and to add education, outreach, and other voluntary techniques. It also intended to maximize the use of DTSC's resources by cooperating with other entities. The measure created the California Source Reduction Advisory Committee. It required the Department to establish a technical assistance and outreach program to promote the implementation of model source reduction measures in priority industry categories and to expand its source reduction program to provide training and resources to certified unified program agencies (CUPAs) as well as other third-party programs that provided technical assistance to generators in identifying and applying methods of source reduction. The measure deleted the biennial report requirement for DTSC and instead required the Department to prepare a work plan every other year, in consultation with the committee, to implement the act. SB 1916 also required DTSC, in consultation with the committee, to develop a low-cost voluntary program to reduce the generation of hazardous waste by large businesses. However, the measure also provided that, if DTSC found that it was not possible to implement such a low-cost program while achieving a significant environmental benefit, the Department would not be required to implement it, as long as the committee concurred.

AB 913 (Chapter 578, Statutes of 2011) amended the act 13 years later to require DTSC to develop a California Green Business Program. Its purpose was to support and assist local government programs that provided for the voluntary certification of small businesses that adopt environmentally preferable business practices. AB 913 essentially codified a somewhat informal, collaborative network that began in the San Francisco Bay Area in the early 1990s and spread statewide. DTSC had begun to assist the network in the late 1990s.

### **Pollution Prevention**

The next major change took place the following year as the result of a budget trailer bill. SB 1018 (Chapter 39, Statutes of 2012) essentially made source reduction a subset of pollution prevention, while at the same time reducing un-utilized and under-utilized source reduction activities, to address the state's fiscal crisis of that time, among other reasons.

The new emphasis on pollution prevention was reflected by a renamed act. It became what it is today: The Pollution Prevention and Hazardous Waste Source Reduction and Management Review Act. The measure defined pollution prevention to mean the reduction of chemical sources that have adverse impacts on public health and the environment, including, but not limited to, source reduction. It provided for a California Pollution Prevention Advisory Committee rather than the California Source Reduction Advisory Committee. The measure often substituted the term pollution prevention for the term source reduction in the previous version of the act. For example, whereas the act previously stated that it was the intent of the Legislature to expand the state's *hazardous waste source reduction* [italics added] activities beyond those directly associated with source reduction evaluation reviews and plans, it now stated that it was the Legislature's intent to expand the state's *pollution prevention* [italics added] activities beyond those directly associated with source reduction evaluation reviews and plans.

However, SB 1018 made pollution prevention, including source reduction, contingent upon available funding and DTSC discretion. It explicitly stated that DTSC's duty to implement the act was contingent upon, and limited to, the availability of funding, although it did not eliminate the requirements for generators. The measure deleted the requirement that DTSC establish various source reduction technical assistance and outreach programs. SB 1018 instead "authorized" the Department to establish various pollution prevention programs for businesses. Support for the California Green Business Program was made discretionary. The measure deleted the requirement that DTSC select at least two categories of generators every two years for enforcement activities. Instead of requiring DTSC to prepare the draft work plan once every two years, the measure authorized the Department to prepare a plan on a periodic basis. Finally, SB 1018 repealed the requirement to develop a low-cost voluntary program to reduce the generation of hazardous waste by large businesses.

DTSC had an office of Pollution Prevention and Green Technology prior to SB 1018. Sometimes referred to as the P2 Office, it administered a collection of programs focused primarily on source reduction for hazardous waste generation, educational efforts, and safe end-of-life management of products with toxic constituents. As a result of the 2012 Budget Act, the P2 positions and resources were redirected to a developing program to implement a new approach to toxics reduction by focusing on consumer products. DTSC made the case for doing so in a 2012 spring finance letter. The proposal noted that the Toxic Substances Control Account did not have sufficient funding to support a new program, but it recommended the implementation of a "modest" consumer products program by reprioritizing activities and reducing or eliminating P2 work. The letter argued that redirecting positions and resources from the P2 Program was appropriate because the new approach had the greatest potential to prevent pollution.

The DTSC website still has a Pollution Prevention and Green Technology page. It provides links to a collection of unevenly maintained information for consumers and businesses, much of it from shortly after 2012 or earlier. Although pollution prevention no longer exists as a DTSC program from an organizational standpoint, no explanation is offered about its actual status. The page arguably gives users the impression that pollution prevention still exists as a viable program. There is a link to a P2 Program Overview that displays information about the

program's mission, objectives, and "what P2 can do for you." The overview offers a phone number for more information about the Office of Pollution Prevention and Green Technology, but there was no answer when the IRP dialed it. There is a link to a website section on the California Green Business Program, with no explanation that it no longer exists as a DTSC program. There is a link to the California Pollution Prevention Advisory Committee, but the link takes the user to an "Inactive Content" page.

On the other hand, the Pollution Prevention and Green Technology page has what appears to be an important and helpful link to a page on the act's requirements for generators. That page explains that qualifying generators must continue to complete the required plans and reports, but that they are no longer required to submit them to DTSC. It notifies generators that they must still make the documents available to DTSC or the CUPA upon inspection. A link takes the user to another page with detailed guidelines to help generators prepare the documents.

The Pollution Prevention and Green Technology page of the DTSC website also has links to pages that are devoted to the myriad of statutory requirements to protect consumers from toxics in products or prevent pollution that are not located in Article 11.9 or Article 14 of Division 20, Chapter 6.5 of the HSC.

At times, it is difficult to determine from the website which of these statutes are actively enforced. There is a page for the Toxics in Products Branch that offers links to reports and information on many of these efforts, but DTSC no longer has a Toxics in Products Branch. Staff members in the Hazardous Waste Management Program or the Safer Consumer Products (SCP) Program administer these programs, apparently depending on factors such as program history and individual staff expertise.

### **Green Chemistry**

Even before the passing of AB 913 and SB 1018, the Legislature and DTSC were looking for other, more holistic strategies. There was a growing recognition that the focus on hazardous waste generation did not adequately address the toxic chemicals embedded in consumer products. The SB 1916 implementation experience had revealed to many that voluntary adoption of pollution prevention practices by industry, in response to educational outreach and technical assistance, was slow and failed to achieve a transformative scale. There were concerns that sporadic restrictions on the use of specific toxic chemicals in products, actions that are sometimes described as "chemical whac-a-mole," were an ineffective approach in the face of the ubiquitousness of chemicals—in products, in the blood and urine of Californians, and in the environment. Moreover, restrictions had sometimes led to "regrettable substitutions"—substitutions that turned out to be equally problematic.

With these concerns in mind, the Legislature commissioned a report prepared by UC Centers for Occupational and Environmental Health entitled *Green Chemistry: Cornerstone to a Sustainable California*. The 2008 report identified several key gaps that it said impeded government's ability from protecting the public. There was a data gap pertaining to the health and environmental effects of the approximately 80,000 industrial chemicals used in the U.S., with only a small percentage of them adequately characterized. There was a safety gap because the federal Toxic Substances Control Act (TSCA) and its regulatory framework were not

sufficiently protecting the public. Finally, there was a technology gap amounting to insufficient incentives for investment in safer chemicals.

CalEPA and DTSC launched their Green Chemistry Initiative (GCI) somewhat in parallel with the UC effort, and the outcome was the California Green Chemistry Initiative Report in 2008. The report made six policy recommendations: (1) expand pollution prevention; (2) develop green chemistry workforce education and training, research, and development, and technology transfer; (3) create an online product ingredient network; (4) create an online toxics clearinghouse; (5) accelerate the quest for safer products; and (6) move toward a cradle-to-cradle economy to leverage market forces to produce products that are “benign by design.” The report endorsed the green chemistry concept, which DTSC Director Maureen Gorsen defined in her report transmittal letter as “a systematic scientific and engineering approach that seeks to reduce the use of hazardous chemicals and the generation of toxic wastes by changing how society designs, manufacturers, and uses chemicals in processes and products.” She added, “Rather than managing wastes after end-of-product life (or ‘cradle to grave’), green chemistry shifts our focus to designing chemicals, processes, and goods that have less or no adverse effects—throughout their lifecycle (‘cradle to cradle’)—on California’s people and our environment.”

That same year the Legislature passed the state’s first green chemistry legislation: AB 1879 (Chapter 559, Statutes of 2008) and SB 509 (Chapter 560, Statutes of 2008). AB 1879 required DTSC to adopt regulations by January 1, 2011 to establish a process by which chemicals or chemical ingredients in consumer products could be identified and prioritized for consideration as being chemicals of concern. It further required the Department to establish a process by the same date whereby chemicals of concern in consumer products, and their potential alternatives, could be evaluated to determine how best to limit exposure or to reduce the level of hazard, and to specify actions that could be taken after the analysis. The measure also required DTSC to establish a Green Ribbon Science Panel for advice and assistance. SB 509 required the Department to establish a Toxics Information Clearinghouse for the collection, maintenance, and distribution of specific hazard traits and environmental and toxicological endpoint data. The measure also exempted certain drugs, dental restorative materials, medical devices, food, related packaging, pesticides, and mercury-containing lights (until 2012) from the program.

### **Safer Consumer Products Program**

DTSC submitted the regulations called for by AB 1879 to the office of Administrative Law in 2010. However, the Department subsequently pulled the draft and continued discussions with the Green Ribbon Science Panel and stakeholders to address comments received. DTSC eventually adopted the regulations in 2013. The SCP regulations established a four-step process:

- (1) The first step is to identify Candidate Chemicals for consideration as a Chemical of Concern. Chemicals are identified as Candidate Chemicals if they exhibit a hazard trait and/or an environmental or toxicological endpoint and either appear on a specified, authoritative list or are a specific type of chemical identified in the regulations. DTSC is required to post a list of the Candidate Chemicals on its website and to periodically update it to reflect changes to the underlying lists and sources for which it is drawn.

DTSC published its first list in September 2013. The regulations also allow for a process to revise the list based on additional criteria, but DTSC has not added a chemical using that criteria to date.

- (2) The second step is to identify and prioritize products that are placed into the stream of commerce in California that contain one or more of the Candidate Chemicals. The regulations outline the principles and the process for listing high priority products as Priority Products. The process includes a rulemaking under the Administrative Procedure Act. A Candidate Chemical that is the basis for a product-chemical combination being listed is designated a Chemical of Concern for that product. The regulations provide for an initial proposed Priority Products list to be available for public review no later than 180 days after the effective date of the regulations. Within one year of the effective date, DTSC is required to issue a Priority Product Work Plan that identifies and describes the product categories that it will evaluate to identify product-chemical combinations to be added to the list during the three years following issuance of the plan. The regulations require DTSC to issue subsequent work plans no later than one year before the three-year expiration date of a current plan. The regulations permit DTSC to revise an adopted work plan to indicate additional product categories if it grants a petition to add or remove a Candidate Chemical, which has not been done to date, or if necessitated by a legal requirement, which occurred in 2016 when a law was passed to add lead-acid batteries. Prior to issuing each work plan, DTSC must hold one or more public workshops. DTSC made its initial proposed Priority Products list available for public comment in March 2014. It issued its first Priority Product Work Plan in April 2015.
- (3) The third step is the Alternatives Analysis. The regulations require a responsible entity for a Priority Product, such as a chemicals manufacturer or retailer, to submit a Preliminary Alternatives Analysis report to DTSC no later than 180 days after the date the product is listed, unless the Department specifies a different due date. The responsible entity must submit a Final Alternatives Analysis no later than one year after the date DTSC issues a notice of compliance for the first report, unless the responsible entity requests and receives an extended due date from DTSC. However, the reports do not have to be submitted if the responsible entity notifies DTSC of its intent to remove or replace the chemical or product. In that case, the responsible entity must still provide information about the replacement chemical, its concentration in the reformulated product, the hazard traits and environmental or toxicological endpoints known to be associated with the replacement chemical, etc. The regulations outline a complicated process and options for both stages. The process as a whole involves a broad and deep analysis of the product's entire lifecycle and is intended to encourage the responsible entity to decide how to make its product safer. Ultimately, the responsible entity must identify and describe the alternative(s) it selects to replace the Priority Product, if any. The Final Alternatives Analysis Report or an alternative Abridged Alternatives Analysis report (for responsible entities that determine that an alternative is not available) must be made available for public review and comment. Following the close of comment and a subsequent opportunity for the responsible entity to address any issues identified by DTSC, the Department must issue a notice of compliance, notice of deficiency, notice of disapproval, or notice of ongoing review. The regulations also require DTSC to make

available on its website, before the Department finalized its initial Priority Products list, guidance materials to assist persons in performing the analyses. DTSC released a draft of its Alternatives Analyses Guide in December 2016 and a finalized version in June 2017.

- (4) The fourth step is a regulatory response. The regulations require DTSC to consider a range of regulatory responses to the Alternatives Analysis when it determines that one is necessary to protect public health and/or the environment. In selecting a response, DTSC is instructed to maximize the use of alternatives of least concern when they are acceptable, technically feasible, and economically feasible. DTSC also is instructed to give preference to responses that provide the greatest level of inherent protection. The regulations define inherent protection as the avoidance or reduction of adverse impacts, exposures, and/or adverse waste and end-of-life effects that is achieved through the redesign of a product or process, rather than through administrative or engineering controls designed to limit exposure to, or the release of, a Chemical of Concern or replacement Candidate Chemical in a product. The regulations authorize DTSC to consider the following factors: (1) public health and environmental protections, (2) private economic interests of responsible entities, and (3) government interest in efficiency and cost containment. They offer a broad menu of possible regulatory responses for required action, including product information for consumers, use restrictions, product sales restrictions, engineered safety measures or administrative controls, end-of-life management programs, and research projects.

The regulations require DTSC to post on its website a wide variety of information on the program's regulatory activities. The Department responded by launching CalSAFER in 2017, an online portal for communication and exchange of information.

There were three initial proposed Priority Products. DTSC has since identified one of them, children's foam-padded sleeping products with Tris (1,3-dichloro-2-propyl) phosphate (TDCPP) or tris (2-chloroethyl) phosphate (TCEP), as its first Priority Product. The regulations to do so went into effect on July 1, 2017. Its responsible entities are required to begin the Alternatives Analysis process by submitting a Priority Product Notification by September 1, 2017. DTSC currently has a proposed rulemaking to identify a second product, spray polyurethane foam with unreacted methylene diphenyl diisocyanate (MDI), as its second Priority Product. The Department is still compiling information on its third proposed Priority Product, methylene chloride paint strippers.

The first Priority Product Work Plan outlined the expected direction of the SCP Program from 2015 through 2017 by discussing seven product categories for future research and investigation. The work plan explained that, in selecting the categories, DTSC considered the factors and criteria required by the SCP regulations, including potential exposures, significant adverse impacts or end-of-life effects, as well as the availability of information, other regulatory programs, and safer alternatives. The work plan observed that it was impractical to employ a ranking and scoring system for prioritization because of the numerous variables and competing goals, and it acknowledged that the Department used its discretion to pick categories, and that other categories could just as well have been chosen. The work plan also discussed the various approaches it used to screen the breadth of consumer product categories. In essence, the work plan performs the important role of alerting chemical manufacturers that DTSC is interested in

certain categories of consumer products and may propose future Priority Products from some of the hundreds, if not thousands of products included among them.

In November 2016, DTSC issued three papers that summarize the findings of the research on specific topics related to the work plan. The topics are (1) nail products; (2) perfluoroalkyl and polyfluoroalkyl substances (PFASs) in carpets, rugs, upholstered furniture, and their care and treatment products; and (3) potential aquatic impacts and continued uses of nonylphenol ethoxylates and triclosan. The documents describe DTSC's preliminary findings and concerns around each topic and identify data gaps to fill as well as questions that stakeholders may be able to answer. According to DTSC, the papers signal the beginning of an ongoing dialogue with interested stakeholders to inform the selection of future Priority Products.

DTSC established the Green Ribbon Science Panel, required by AB 1879, in 2009. It is comprised of experts to provide advice on scientific matters, chemical policy recommendations, and implementation strategies. DTSC established the Toxics Information Clearinghouse, required by SB 509, in 20\_\_\_. However, Internet searching technology and website content from other sources have improved since the clearinghouse was conceived, and DTSC has not actively maintained it because of other priorities.

Like the California Global Warming Solutions Act of 2006, the SCP Program is innovative and a potential driver of change. The Alternatives Analysis, the third step in the process, is especially so. It requires the responsible entities to take more responsibility for their products by articulating their assumptions, processes, uncertainties, and how they weighed this information for their recommendations. Rather than applying a traditional risk assessment formula, it requires a deep analysis of all impacts.

While appreciating that this process encourages reflection on the part of responsible entities, and that such reflection may lead to innovation, the chemical industry and other stakeholders have raised concerns. A common criticism is that the Alternatives Analysis Guide does not give enough guidance. It has been suggested that the Department develop a format for submissions to give the responsible entities a better idea of what is expected of them. There are other business concerns, including antitrust and competitive advantage issues, as well as potential legal problems for responsible entities if they are unable to recommend the safest possible alternatives. Timothy F. Malloy, J.D., a member of the Green Ribbon Science Panel, additionally suggested to the IRP that the program should have established clear standards for reviewing the tradeoffs between different outcomes. He sees this absence as a possible vestige of the voluntary emphasis of the former Pollution Prevention and Green Technology Program, and he worries that some responsible entities may ask less of themselves than others in terms of identifying alternatives. The chemical industry, on the other hand, argues that flexibility is necessary for innovation, and it points out that the fourth stage in the process, the regulatory response, gives DTSC the necessary backstop for the tradeoffs outlined in the Alternatives Analysis. Undoubtedly, much will be learned from the analyses that are expected to be submitted on the program's first Priority Products in the coming months.

Although the Frank R. Lautenberg Chemical Safety for the 21<sup>st</sup> Century Act significantly reformed TSCA in 2016, the IRP believes there still is an opportunity for California's SCP Program to continue playing an important role in protecting human health and the

environment from harmful chemicals in products. The federal law now requires U.S. EPA to evaluate chemicals with clear deadlines and to eliminate unreasonable risks. TSCA also precludes state action on a chemical if U.S. EPA is evaluating it or has acted on it. However, states can act on any chemical that U.S. EPA has not yet addressed. They also can restrict a chemical to address a different risk than U.S. EPA addressed or in accordance with a federal waiver. In addition, personal care products are exempt from TSCA, but not from the SCP Program. Looking back in time, it can be argued that California's SCP Program and related activities by other states played an important role in a preemption compromise that paved the way for TSCA reform.

The SCP Program got off to a slow start. DTSC adopted its SPC regulations more than two years after the required deadline in the green chemistry legislation. Other deadlines have been missed as well, such as the publication of the first Priority Product Work Plan and the release of the Alternatives Analysis Guide. The work plan predicted the announcement of three product-chemical combinations in 2015, more than five in 2016, and more than five in 2017. The Department has not announced any to date. DTSC representatives and many stakeholders point out, however, that the green chemistry legislation was extremely ambitious and groundbreaking, and that the program had to start out slowly to get the fundamentals right. The hope is that, once DTSC has guided several products through the steps of the regulatory process, it will have learned from the experience and found ways to speed up its process.

One example of reflecting on past experiences and looking for ways to improve is a recent DTSC efficiency project aimed at the second step of the four-step process. The Department appears to have reduced the estimated time it takes to complete 95 percent of the Priority Product profiles from up to 3.5 years to only one year. It did so by eliminating unnecessary process steps, streamlining less necessary ones, standardizing work, developing a flexible workforce, improving communications, and other changes.

The SCP Program has a budget of a little more than \$4 million in 2017-18. It has 23 positions in the SCP Branch, five additional positions that support both the SCP Branch and the Health and Safety Branch, plus the Safer Products and Workplaces Program Deputy Director and two staff members who assist the Deputy Director. The IRP believes that DTSC has created a strong foundation for an innovative program, but the program will have to "scale up" at some point, if it is to fulfill expectations. It will need more than streamlined work processes to address the hundreds, if not thousands of products covered in just the first Priority Product Work Plan or to make a noticeable impact on the state's toxic waste stream. This will require significantly more resources.

Some stakeholders argue that the SCP Program should not be judged by the number of Priority Product listings or restrictions placed on products following the Alternatives Analysis process. As representatives of DTSC and many stakeholders told the IRP, the expectation is that chemical manufacturers will voluntarily find safer alternatives in anticipation of future California action. It will be difficult to document many such decisions, but the expectation is that "the program's shadow will be greater than its shape." The Panel understands this view, but feels that measurable performance metrics for the SCP Program should be identified and adopted.

Stakeholders were nearly unanimous that DTSC is the appropriate agency to house the SCP Program because it has the necessary enforcement, communication, and risk-management expertise. DTSC Director Barbara Lee asserts that it complements the Department's other two broad programs: the Hazardous Waste Management Program, which seeks to prevent the release of hazardous constituents from facilities, and the Site Mitigation Program, which addresses what happens when hazardous materials are released into the environment. She argues that the program represents the ultimate management of toxic substances because it seeks to address the entire lifecycle of a hazardous material, from the manufacturing phase to the waste stream impacts.

### **Recent Consumer Products Legislation**

California established additional laws to address toxic materials in consumer products since the green chemistry legislation of 2008. SB 757 (Chapter 614, Statutes of 2009) prohibited the manufacture, sale, or installation of a wheel weight in the state that contains more than 0.1 percent of lead by weight. SB 346 (Chapter 307, Statutes of 2010) and subsequent amendments to that legislation gave DTSC responsibility for limiting the content of copper, other heavy metals, and asbestos in motor vehicle brake friction materials. Regulations for the phaseout went into effect on January 1, 2017. AB 2125 (Chapter 564, Statutes of 2016) directed DTSC to publish guidelines for city and county voluntary implementation of healthy nail salon recognition programs. This statute, which was added to the Green Chemistry article of the HSC, is reminiscent of the voluntary pollution prevention programs of earlier years.

The Legislature has occasionally considered legislation that would require DTSC to take actions aimed at specific products within the framework of the SCP regulations. SB 839 (Chapter 340, Statutes of 2016) requires DTSC to revise its 2015-2017 Priority Products Work Plan to include lead acid batteries for consideration and evaluation as a potential Priority Product. In 2017, two bills were introduced that sought to require DTSC to revise its current or subsequent Priority Products Work Plan to include certain products for consideration and/or include certain products as draft Priority Products. Chemical industry representatives argue that the intent of Green Chemistry law is to create a deliberative, science-based process and that legislative initiatives should be discouraged if they circumvent scientific evaluation. Other stakeholders, however, make a case that the Legislature should exercise its right, on behalf of the public at large, to require DTSC to act faster or differently to protect public health and the environment.

### **Biomonitoring Support**

The SCP Program receives important support from DTSC's Environmental Chemistry Laboratories and the California Environmental Contaminant Biomonitoring Program (Biomonitoring California). The laboratories, which also support DTSC's Hazardous Waste Management and Brownfields & Environmental Restoration programs, have a long history of scientific leadership in biomonitoring for chemicals of emerging concern dating from the 1980s. Created by 2016 legislation, and with DTSC as its lead agency, Biomonitoring California determines levels of environmental chemicals in representative samples of Californians, establishes trends in the levels of these chemicals over time, and helps assess the effectiveness of public health efforts and regulatory programs to decrease exposure to specific chemicals. One of the 23 authoritative lists for DTSC's Candidate Chemicals list is from Biomonitoring California. DTSC's laboratories continue to conduct their own biomonitoring studies outside of the Department's involvement in Biomonitoring California.

### **Source Reduction/Pollution Prevention Re-engagement**

Since the redirecting of resources to the SCP Program in 2012, DTSC has re-engaged on source reduction/pollution prevention, this time with a new emphasis on environmental justice. In 2015, the Department requested and received a budget augmentation of \$840,000 and six positions for two years to implement a Community Protection and Hazardous Waste Reduction Initiative. DTSC proposed to select up to three pilot projects to reduce hazardous wastes that are generated in significant quantities, can pose substantial risks to human health in the environment, and are treated or disposed of in communities that are disproportionately burdened by multiple sources of pollution. DTSC also proposed to create a stakeholder advisory committee for the initiative that would be modeled after the inactive California Pollution Prevention Advisory Committee. For each of the pilot projects, DTSC proposed to produce a set of findings and recommendations by June 30, 2017. Of note, the pilot projects were studies—none materially resulted in actual source reduction of any hazardous substances. Also of note, the report is overdue.

DTSC designed the initiative to leverage its goal to reduce by 50 percent the hazardous waste generated in California and disposed into hazardous waste landfills by 2025, a goal the Department announced in 2013 when it approved the expansion of the landfill at the Kettleman Hills facility, one of the state's two hazardous waste landfills. (According to information DTSC provided the IRP at the Panel's June 14, 2017 meeting, hazardous waste generation in California trended downward from about 2.4 million tons in 2000 to about 1.8 million tons in 2015. However hazardous waste generation increased slightly between 2013 and 2015.)

DTSC and the committee ultimately selected four pilot project topics: contaminated soils, petroleum refinery wastes, organic solvent wastes, and lead-acid batteries. DTSC added the fourth topic after the Governor, on February 17, 2016, directed the Department to evaluate lead-acid batteries under the initiative and stated that the analysis could result in identifying lead-acid batteries as an SCP Program Priority Product. The methodology for the first three topics involved data gathering, identifying and evaluating one or more waste reduction proposals or treatment technologies, and developing various work products, including recommended cost-effective strategies to carry out identified reductions. The methodology for the lead-acid battery topic involved identifying and quantifying the impacts of all aspects of lead-acid battery manufacturing, handling, transportation, treatment or recycling operations, and illegal disposal. This work is expected to lead to proposed goals in the reduction of exposure to hazardous constituents, volume of spent lead-acid battery generation, or volume of wastes generated by recycling and treatment. The timing and practical implementation of these proposed goals, however, are uncertain.

The IRP hopes the final report will offer promise that new waste reduction measures and technologies can impact the generation of hazardous waste. Since the current requirements for generators to develop pollution prevention are not enforced, the state may need to consider mandatory waste reduction measures and technologies if they are found to be viable.

### **Recommendations for the Governor and Legislature to Improve Source Reduction Program**

1. The Governor's Office and the Legislature should examine future revenue sources for DTSC. Hazardous waste generation and disposal in California are decreasing, and this decrease will eventually be accelerated by successful implementation of the hazardous waste source reduction and SCP efforts. This will reduce the amount of funds going into the Hazardous Waste Management Account.
2. Generators of more than 12,000 kilograms of hazardous waste annually are currently required to complete and maintain a hazardous waste source reduction plan, a performance report, and a summary progress report. Penalties are established for failure to prepare and provide these documents to authorized representatives of DTSC or their unified program agency. However, there are there no penalties for failure to implement their source reduction evaluation review and plan. Change section 25244.21 of the HSC to penalize generators for failure to implement their evaluation review and plan by taking the technically feasible and economically practicable source reduction measures with respect to each hazardous waste stream they identified in them.

### **Recommendations for the DTSC to Improve Source Reduction Program**

1. DTSC should publish plan and milestones for next step from pilot studies.
2. Update the website to reflect the status of DTSC's Pollution Prevention and Green Technology programs.

### **Recommended Goals and Performance Metrics for Source Reduction Program**

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### **Recommendations for the Governor and Legislature to Improve Safer Consumer Products Program**

1. The Safer Consumer Products (SCP) branch of the DTSC is a young program that will require appropriate resources to grow and function effectively and to its maximal capability. As the program develops, there will be a need for the Legislature to periodically review the progress and provide necessary resources.
2. Clarify that DTSC has the authority and responsibility to substantively evaluate the bases and conclusions of Alternative Analyses reports submitted to the Department, including the relative weight accorded to each of the relevant factors considered in the Alternative Analyses.
3. Fee to pay for SCP.
4. The Legislature should preserve the SCP Program's comprehensive, science-based review process and not bypass it by identifying chemical/product combinations as

potential Priority Products, requiring DTSC to adopt regulations in accordance with the Green Chemistry statute, or prohibiting the manufacture, sale, or distribution of any chemical/product combination.

## **Recommendations for the DTSC to Improve Safer Consumer Products Program**

1. Because of the innovative nature of the SCP program, there is limited precedent that can be used as a guide. Therefore, it will be crucial to have clear action items to address the strategic plan associated with the Vision and Mission of the branch. These reports should be provided periodically so that the program can be assessed and appropriate resources allocated.
2. Provide standards for the Alternative Analysis process so that there is consistency amongst the reports and provide a DTSC decision-making criteria that is justifiable, rigorous, and supportable by the data.
3. DTSC should evaluate in writing its compliance with its 2015-17 Priority Product Work Plan.
4. DTSC should have milestones and metrics for the SCP Program, including some way to track its impact on hazardous waste generation.

### **Recommended Goals and Performance Metrics for Safer Consumer Products Program**

1. The most objective and accurate performance metrics for the SCP program would be biomonitoring data showing a reduction in the environmental and biological burden of the priority products that have been replaced by safer chemicals. This information will not be readily available and may take several years to assimilate. DTSC should plan to use biomonitoring as a metric in the future.
2. For immediate evaluation of the program, more subjective assessments can be conducted, such as surveys that monitor the perception of the various stakeholders as to the success of the program.
3. The SCP branch should compile a list of short-term and long-term goals and periodically assess how many of these goals have been achieved.

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