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**DEPARTMENT OF TOXIC SUBSTANCES CONTROL
CALIFORNIA GREEN CHEMISTRY INITIATIVE
PHASE 2 – KEY ELEMENT TEAMS**

**ACCOUNT FOR CHEMICAL TOXICITY AND IMPACTS IN
STATE PROCUREMENT DECISIONS**

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California must lead by example and adhere to the same standards it proposed for the private sector. State agencies can leverage their influence in the marketplace by including cradle-to-cradle and life-cycle cost analyses in purchasing decisions.

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Executive Summary

The California Environmental Protection Agency directed the Department of Toxic Substances Control to lead Cal/EPA's Green Chemistry Initiative with the goal of significantly reducing public health and environmental impacts, as well as costs, by affecting the redesign of product formulations and manufacturing processes. The initiative gathered policy options through a "Conversation with California." As part of the "Conversation with California", the Green Chemistry Initiative Science Advisory Panel prepared a report, "Green Chemistry Options for the State of California."

A Key Element outcome from the "Conversation with California" is to account for chemical toxicity and impacts in state procurement decisions. California law directs the Department of General Services, in consultation with Cal/EPA, to provide state agencies with information and assistance regarding environmentally preferable purchasing. DGS has established a framework for environmentally preferable purchasing (EPP) throughout its procurement activities to meet its obligations under Public Contract Code, sections 12400-12404. The State should continue its EPP efforts, develop a strategy to strengthen the state's existing environmentally preferable purchasing activities, and broaden the scope of its efforts to provide green chemistry solutions to consumers beyond state government.

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Introduction

Secretary for Environmental Protection Linda S. Adams stated in her memo announcing the California Environmental Protection Agency's (Cal/EPA) Green Chemistry Initiative that California needs to "develop a coordinated, comprehensive strategy designed to foster the development of information on the hazards posed by chemicals, ways to reduce exposure to dangerous substances, approaches that encourage cleaner and less polluting industrial processes, and strategies to encourage manufacturers to take greater responsibility for the products they produce."

Secretary Adams directed the California Department of Toxic Substances Control (DTSC), in collaboration with the other Cal/EPA boards, departments, and offices and other state agencies, to initiate a broad public process to generate ideas and identify policy options. The Conversation with California involved over 600 participants and consisted of five major components: brainstorming sessions, Green Chemistry symposia, a web log, the Science Advisory Panel, and preparation of a report, "California Green Chemistry Initiative, Phase 1: A Compilation of Options."

The Phase 1 Report identified Key Elements that recurred throughout options that were received from the Conversation with California. As identified in the Phase 1 Report, one Key Element is "Account for chemical toxicity and impacts in state procurement decisions. California must lead by example and adhere to the same standards it proposes for the private sector. State agencies can leverage their influence in the marketplace by including cradle-to-cradle and life-cycle cost analyses in purchasing decisions."

To engage the scientific community, the Green Chemistry Initiative Science Advisory Panel was assembled, consisting of 23 of the nation's leading scientists and engineers. The panel is a public advisory group structured to provide DTSC with a balanced, expert assessment of scientific matters pertaining to the advancement of green chemistry. Following seven months of discussion, the panel prepared a report, "Green Chemistry Options for the State of California." All members of the panel agreed on one central concept – "the advancement of green chemistry in California is an effective vehicle to promote innovation in ways that also protect human health and the environment and provide new economic opportunities to the people of California."

The Science Advisory Panel identified a range of options to increase the demand for greener chemicals, products, process and technologies. The first group of options under "Information and Tools" provides access to information and develops tools that help producers, sellers, purchasers and consumers of chemical products and services to select greener alternatives. The second group of options under "Market Promotion of Green Chemistry" promotes the adoption of greener products in the marketplace. One option in the Market Promotion of Green Chemistry is to incorporate green chemistry criteria into state procurement processes.

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California can support green chemistry through its role as a consumer of environmentally preferable goods and services. This option would leverage the collective purchasing power of the Department of General Services (DGS), other state agencies, city and county governments, and public schools as well as other states through leveraged regional contracts such as the Western States Contracting Alliance (WSCA). WSCA was formed by the state purchasing directors as a means wherein participating states may join together in cooperative multi-state contracting to achieve cost-effective and efficient acquisition of quality products and services. Cooperative purchases are developed by member states. Enlarging the scope of the state's existing environmentally preferable purchasing (EPP) activities could enable green chemistry solutions to be recognized and considered in ongoing decisions, thereby expanding demand for these environmentally preferable products.

The Challenge

State government as a consumer is an entity that is comprised of over 200,000 employees working within a vast organizational structure. Within the community of state employees, thousands are involved in some aspect of purchasing, such as those who oversee an organization's purchases, procurement and contracting officials, employees who place orders for products, and local government and other organizations (such as the University of California, California State University, California Community Colleges, and other school facilities throughout the state) that utilize state contracts.

Some aspects of state purchasing are centralized through Department of General Services and its divisions, such as Real Estate Services Division and Procurement Division. The scope of DGS' purchasing oversight is apparent, considering the breadth of the services it provides. The Real Estate Services Division (RESA) provides real estate services to state agencies. These services include asset management and planning, property sales and acquisition, project management, architectural and engineering services, leasing and planning, property management and building maintenance, construction management, energy efficiency and supply programs, and environmental assessments. RESA manages over 24 million square feet of space in state owned or managed facilities.

The Procurement Division sets state procurement policies, provides purchasing services, delegates purchasing authority, certifies small/disabled veteran businesses to do business with the state, sponsors the Small Business Council, participates in the Disabled Veterans Business Enterprise Council, and provides innovative purchasing methods. The Procurement Division oversees approximately 295 commodity contracts with approximately 450 suppliers, administers more than 1,800 California Multiple Award Schedule (CMAS) contracts, and administers 343 Master, 70 Western State Contract Alliance (WSCA) and 100 Software Licensing Program (SLP) agreements.

The task of accounting for chemical toxicity and impacts in state procurement decisions is daunting, considering the sheer number of end-users and purchasing decision

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makers, the complexity of state government's organizational structure, and the number of products purchased and services utilized by over 200,000 state employees. The addition of a directive to account for chemical toxicity and impacts, that is to purchase environmentally preferable products and services, may pose a challenge to existing resources.

However, investing in EPP is an investment in California's future. EPP provides a variety of benefits that can range from financial, human health and the environment, to larger societal benefits. Financial costs and benefits can be quantified by weighing the purchasing price and frequency of purchase against operating costs, maintenance repair and replacement costs, occupational health costs, and liability. In contrast, environmental and societal costs and benefits are much harder to quantify and incorporate into decision making.

Commonly cited environmental benefits include, but are not limited to, reducing materials consumption, providing a useful outlet for collected recycled material, reducing greenhouse gas emissions, conserving water, conserving energy, increasing the use of renewable products, and reducing the presence of toxic and hazardous substances in the workplace and environment. These benefits in turn improve public and occupational health and safety, improve wildlife habitats, decrease air, water, and soil contamination, improve compliance with regulations, decrease costs associated with waste management, disposal, and cleanup, promote a sustainable economy, and develop markets for environmentally preferable goods and services (U.S. EPA, EPA530-N-01-002). While these benefits are difficult to measure, and are in some cases incommensurable, they are the types of considerations that can be analyzed with life cycle analyses. Life cycle measurements and assessments, as discussed in Appendix of the Green Chemistry Initiative's Policy Recommendations Report, can effectively account for many of these benefits and incorporate their values into purchasing decisions.

Background

Assembly Bill 498 (Chan, Chapter 575, Statutes of 2002) added sections 12400-12404 to the Public Contract Code (PCC) and directs DGS, in consultation with Cal/EPA, members of the public, industry, and public health and environmental organizations, to provide state agencies with information and assistance regarding environmentally preferable purchasing. Environmentally preferable purchasing (EPP) is defined in state law as "the procurement or acquisition of goods and services that have a lesser or reduced effect on human health and the environment when compared with competing goods or services that serve the same purpose." Unlike other laws that may focus on one toxic component or environmental pathway, this law requires the comparison of human health and environmental effects of competing goods and services to include, to the extent feasible, multiple attributes such as "raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, disposal, energy efficiency, product performance, durability, safety, the needs of the purchaser, and

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cost.” With regard to performance and cost, state law specifies that EPP does not require the “acquisition of goods or services that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.”

DGS, the California Integrated Waste Management Board, and over 100 state employees from about 16 state agencies, created an online Environmentally Preferable Purchasing Best Practices Manual. The EPP Best Practices Manual serves as a guide to help EPP practitioners, including state agencies with purchasing authority, find and select environmentally preferable products. The Best Practices Manual helps purchasing officials write environmental specifications into bid solicitations, access Web sites and other resources related to EPP, choose more environmentally preferable products and services in numerous categories, become educated about the environmental impacts associated with the manufacture and purchase of numerous products and services, identify ways to reduce waste in the office, shop, or facility, and locate surplus and reuse programs to obtain low-cost or used equipment and supplies. DGS continues to add and update the Best Practices Manual, which now contains 35 chapters on specific commodities.

DGS incorporated some environmentally preferable attributes in contracts for 28 commodities or services. These contracts cover a variety of commodities and services including air filters; recycled plastic benches and tables; binders; carpet; cleaning products; computers; monitors; copiers and associated services; electronic waste recycling services; envelopes; fluorescent lamps; glass spheres for traffic paint; paper grocery bags; lockers and storage cabinets; lube, oil, and grease; maintenance, repair and operations; mattresses; office supplies, recycled paint; copy paper; newsprint paper; uncoated offset book paper; printers; signs; remanufactured toner cartridges; trash bags; hybrid vehicles; and alternative fueled vehicles. As an ongoing practice DGS uses a process of continual improvement to advance the environmentally preferable features of contracts each time the contracts are renewed.

AB 498 directs DGS to increase EPP through the development of statewide policies. DGS issued Administrative Order 06-04, a sustainable copy paper policy, with support from the Governor’s Green Action Team, as part of the State’s efforts to promote sustainable paper use strategies and promote energy savings. The policy requires DGS’ Procurement Division, the Business Services Office, and all purchasing agents for the DGS to purchase only 100 percent post consumer recycled content copy paper. This policy also adopted measures to help reduce consumption of paper such as purchasing equipment that automatically print or copy on both sides of a sheet of paper and expanded the use of electronic communications.

DGS has an MOU with the Center for a New American Dream, a non-profit organization, to provide California with pro bono support to accomplish two principal objectives: revamp the Best Practices Manual to expand the scope of outreach to include individual consumers as well as suppliers and to develop marketing tools to

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publicize the revised manual; and develop a methodology for evaluating product standards and independent third party certification processes.

The California Procurement & Contracting Academy (Cal-PCA) provides free professional development courses and seminars to the state procurement and contracting community so they can acquire essential knowledge that will improve the state's contracting processes. DGS' Procurement Division and the California State University (CSU) System coordinate and deliver all the courses, workshops, and certificates. As part of this effort, DGS developed a workshop offered through the Cal-PCA on environmentally preferable purchasing. The workshop acquaints state buyers and other interested parties with California's EPP and State Agency Buy Recycled Campaign (SABRC) programs. Upon completion of the workshop, students understand: the elements of EPP; how to identify key environmental attributes of a product; how to specify environmentally preferable products; green products available on State contracts; how to use EPP Best Practices Manual; how to interpret eco-labels and recognize false claims, or "greenwashing;" the elements of the SABRC program; and how to comply with SABRC reporting requirements.

The Opportunity

DGS has established a framework of EPP throughout its procurement activities and continues to meet its obligations under AB 498. In the near term the following options are recommended to address the goals of the Green Chemistry Initiative and strengthen the existing EPP framework.

1. DGS should continue to incorporate environmentally preferable attributes in contracts for commodities and services. Currently, DGS has 28 contracts in place, however, DGS oversees over 295 commodity contracts. This represents a huge opportunity to expand the EPP program to additional commodities and services.
2. DGS' MOU with the Center for a New American Dream Outreach is expected to result in additional outreach beyond state employees to individual consumers as well as suppliers. The development of a methodology for evaluating product standards and independent third party certification processes would hasten the incorporation of such standards and certified processes into contracts, thereby increasing the state's purchase of environmentally preferable products and services.
3. As California implements its strategy to meet the goals established by Secretary Adams, "to develop a coordinated, comprehensive strategy designed to foster the development of information on the hazards posed by chemicals, ways to reduce exposure to dangerous substances, approaches that encourage cleaner and less polluting industrial processes, and strategies to encourage manufacturers to take greater responsibility for the products they produce," it is crucial for coordination between GCI and DGS to ensure that disclosure and data needs are met to promote environmentally preferable purchasing. Vendors are constantly promoting new products

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with claims of enhanced characteristics to meet end user needs. Information gathered and disseminated in the consumer outreach key element can help DGS to distinguish environmentally preferred products and evaluate new products, such as those containing nanomaterials.

DGS, in the role of the state's business manager, requires scientific and engineering support to evaluate the environmental claims of products and services purchased by the state. Under a longer time-frame, the following options would require participating agencies to identify and designate resources to help accomplish these activities.

4. In a coordinated effort, state agencies including Cal/EPA, DGS, and the Department of Public Health could develop general product protection goals to protect the State and the public from environmental health impacts from chemicals in products for the products' life cycle. These goals would be used to evaluate existing product standards.

5. The state purchases thousands of different products, many with claims of environmental benefits. To help focus DGS' resources dedicated to promoting EPP, GCI should define a priority list of product categories for evaluation and inclusion in solicitations in order to reduce exposure risks.

6. GCI, in collaboration with applicable state agencies including the Department of Public Health, Cal/EPA, and DGS, should develop a tool box of broad based product evaluation criteria, specifications, and standards to address toxic chemical exposures and impacts across the entire life cycle of products including those pertaining to the supply chain.

7. GCI, in collaboration with applicable state agencies including the Department of Public Health, Cal/EPA, and DGS, could develop standardized transparent product life cycle impact assessment (LCIA) metrics specifically applicable to toxic chemicals for general use for procurement. This development would include energy, resource, and toxicity calculation and baseline rules that may be applied for Statewide EPP use. As defined by USEPA, the life cycle impact assessment (LCIA) phase of a life cycle assessment (LCA) evaluates potential human health and environmental impacts of the environmental resources and releases identified during the life cycle inventory. Impact assessment should address ecological and human health effects as well as resource depletion. LCIA attempts to establish a linkage between the product or process and its potential environmental impacts.

8. DGS, Procurement Division should conduct a pilot product project using the GCI developed tool-box and the LCIA metrics to determine their effectiveness as a part of the EPP procurement process and will report on any criteria found that can be applied to other statewide product purchases and where new and more tailored standards may be needed for future procurements of products.

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9. GCI, in collaboration with applicable state agencies including the Department of Public Health, Cal/EPA, and DGS, should develop standardized template criteria for Environmental Product Declarations related to toxic chemicals. An Environmental Product Declaration (EPD) is defined as “quantified environmental data for a product with pre-set categories of parameters based on the ISO 14040 series of standards, but not excluding additional environmental information”.

10. GCI, in collaboration with DGS and Cal/EPA, would recommend applicable evaluated standards to state agencies, local governments and public schools for integration into all procurement processes. DGS would integrate recommended standards into all applicable contracts including Participating Addenda which allow for the use of leveraged agreements developed by regional contracting associations such as WSCA without additional competitive bidding requirements.

Implementation Plan

The state should develop a plan to strengthen the state’s existing environmentally preferable purchasing activities, and broaden the scope of its efforts to provide green chemistry solutions to consumers beyond state government. The plan should consider, but is not limited to, the options provided above. The plan should also include the identification of resources to complete the options, with the understanding that the plan will involve fundamental changes and improvements to the state’s procurement processes. The goal of the plan is for the state to leverage its influence in the marketplace through its EPP activities to promote the redesign of product formulations and manufacturing processes through green chemistry principles. As a major consumer the state of California could help companies to achieve the economies-of-scale needed to provide innovative or specialized products to a wider audience. This can enlarge the array of green products available to consumers at large, and as a result, public health and environment impacts, as well as economic costs, could be reduced.

Recommendation

The options specified above would contribute to meeting the goal of increasing the supply of greener, safer, more sustainable products by encouraging cleaner and less polluting industrial processes, and encouraging a more sustainable approach to product manufacturing. Options 1, 2, and 3 can be implemented in the near term with existing resources, or a redirection of existing resources. The remaining options are longer term solutions that can be addressed as the program expands and more resources become available.