

STATE PROCUREMENT TECHNICAL PAPER

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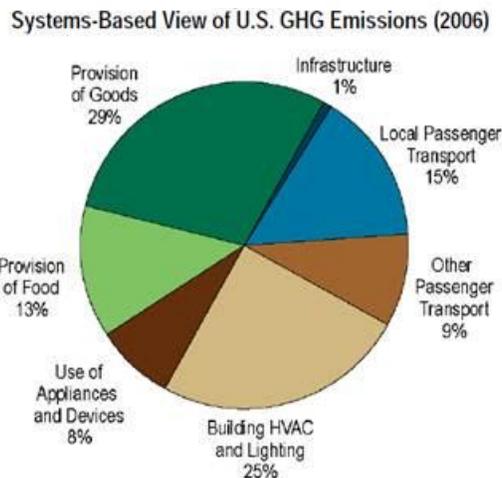
I. INTRODUCTION

Procurement decisions made by State agencies and departments are directly linked to the climate change goals of AB 32 and the recycling goals of AB 341. These decisions impact the greenhouse gas (GHG) emissions and the carbon footprint of State operations, and offer an opportunity to increase markets for post-consumer recycled content (PCRC) products, which will be critical in helping to achieve AB 341's 75% Statewide recycling goal.

The State of California purchases large volumes and a wide variety of goods. The State spent approximately \$12.8 billion on services and \$1.5 billion on goods in 2012 (which was a relatively low-spending year due to budget cuts). The Department of General Services (DGS), which is the central purchasing authority for all State agencies, CalRecycle, and other State agencies have programs that influence procurement decisions.

As an illustration of how purchasing can impact GHG emissions, a study prepared for Cal/EPA and the ARB¹ suggests that significant life-cycle GHG emissions reductions can be achieved via use of product carbon labels and procurement of PCRC products. In addition, a U.S. Environmental Protection Agency (USEPA) study² shows that over 40 percent of GHG emissions are associated with the provision of goods and food as indicated in Figure 1 below.

Figure 1:



DGS and CalRecycle have made major strides in recent years in promoting the purchase of environmentally preferable products (EPP) and PCRC products. However, as described below, only a small portion of overall State spending, less than \$200 million annually, is known to be on PCRC products; how much of the overall \$14 billion in State goods and services purchasing might be for products that could entail PCRC is unknown. Based on existing purchasing data, it is difficult to

¹ http://www.arb.ca.gov/research/single-project.php?row_id=64820

² "Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices", U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, September 2009.

determine which products to focus our efforts on, and which agencies purchase these products and how they purchase them. Additional data is needed in order to know how to modify current purchasing practices that will result in reduced GHG emissions and increased markets for PCRC products.

These challenges are not insurmountable but will require a high degree of collaboration among State and local government agencies, goods providers, and end users. Improvements can be made throughout the State purchasing system including:

- standardize tracking of all State purchases (CalCard, Request for Quotes, leveraged procurement agreements, and service contracts),
- ensure that all purchasing mechanisms (state contracts, delegated authority contracts, and service contracts that include goods procurement) incorporate recycled-content requirements and considerations,
- identify statutory changes to improve/expand recycled-content products purchasing, and
- require product manufacturers to provide environmental information on their products and improve availability of this information to individuals making purchasing decisions.

II. BACKGROUND/OVERVIEW

Understanding and influencing procurement decisions requires basic data on what goods are purchased, by whom, and in what volumes. Given the wide variety of goods purchased each year by a multitude of State agencies, this is not an easy question to answer. DGS is responsible, in consultation with the California Environmental Protection Agency (CalEPA, represented by CalRecycle and other CalEPA departments), for implementing the EPP program pursuant to Public Contract Code Section 12400. As part of the EPP program, DGS has established the Performance and Environmental Standards (PES) Workgroup, which is comprised of State agency representatives who provide input on various environmental parameters. DGS has also developed several Statewide contracts that are available through its *Buying Green Guide* (e.g., ink and toner cartridges, copy paper, computers/monitors, multi-function devices, exterior paint, open office panel systems, disposable food service supply, toilet paper, vehicles). These “green” contracts incorporate multiple environmental (i.e., EPP) considerations, and often include minimum levels of post consumer recycled content to conform to State Agency Buy Recycled Campaign (SABRC) requirements. State agencies can use these contracts when purchasing those products, although most State agency purchasing appears to be conducted via other mechanisms. In addition, DGS offers training and outreach through the California Procurement & Contracting Academy, the Procurement Division Broadcast Bulletin system, and quarterly customer forums to small business as well as State purchasing agents.

CalRecycle is responsible for the SABRC, pursuant to Public Contract Code Sections 12153-12320, under which State agencies have mandated goals regarding the purchase of post-consumer recycled content products. State agencies are required to report annually to CalRecycle the results of their recycled content purchases within 11 categories of material types. Products with post-consumer recycled content provide multiple benefits to California (e.g., increased economic development, reduced pollution and lower greenhouse gases) and by purchasing these products the State supports businesses making PCRC products and influences recycling markets. According to SABRC reporting, in 2011/2012 State agencies spent more than \$185 million in SABRC purchasing categories; about \$130 million of these purchases were PCRC products. This represents only about 8% of direct goods purchases. In comparing the SABRC and EPP programs and the focus of the respective departments, DGS works primarily with State agencies on government purchases and has a broad scope with respect to covering multiple environmental attributes in its EPP program. Additionally, DGS has multiple statutory sustainability priorities besides the environment, including socio-economic activities to encourage small business and disabled veteran business enterprises. Meanwhile, CalRecycle and ARB activities cover a wide range of products and purchasers (both government and non-government entities), but they have a more narrow focus on achieving GHG and waste reduction goals (rather than a detailed focus on all environmental and socio-economic considerations).

Purchasing Data

The information in this document is derived from two sources of State procurement data: the State Contract & Procurement Registration System (SCPRS) and the SABRC reports. Each has different emphases and limitations. SCPRS covers all purchases of goods and services over \$5,000, while SABRC focuses on purchases of recycled-content products in 11 broad product categories.

Analysis of SCPRS Data

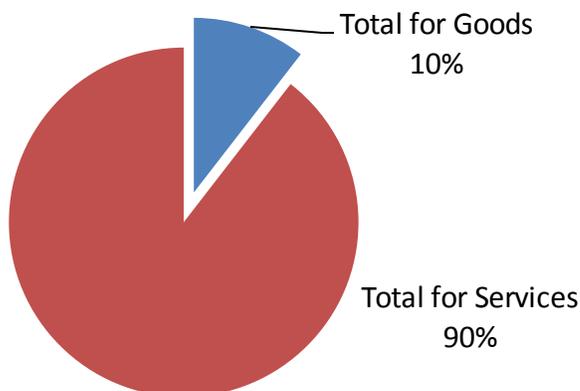
The State Contract & Procurement Registration System (SCPRS) is maintained by DGS and tracks goods and services over \$5,000 procured by the State of California. As shown in Table 1, State procurement of goods and services totaled approximately \$14.3 billion in 2012. Of this, \$1.5 billion of these purchases are directly for purchase of goods. However, as explained below, an unknown amount of goods is also purchased as part of overall services purchases.

Table 1. State Procurement of Goods and Services (2012)

<u>Procurement Type</u>	<u>Unit Total</u>
IT Goods Total	\$374,592,000
IT Services Total	\$1,188,124,000
NON-IT Goods Total	\$1,119,869,000
NON-IT Services Total	\$11,580,335,000
Grand Total	\$14,262,920,000
Total for Goods (IT and non-IT)	\$1,494,461,000
Total for Services (IT and non-IT)	\$12,768,459,000

The "IT Goods" and "NON-IT Goods" categories include goods or commodities such as computers, electronics, office supplies, highway construction and maintenance material, building materials, landscaping maintenance supplies, food, vehicles, vehicle parts and supplies, and numerous other type of goods. The "IT-Services" and "NON-IT Services" categories include expenditures associated with services such as temporary labor, equipment maintenance contracts, and goods purchased within those service contracts. Depending on the purchasing agency, the amount of a service contract that can be used to purchase goods may vary.

Figure 2. Expenditures for Goods and Services (2012)



As shown in Figure 2, about 10% of the expenditures in 2012 were used to purchase goods. However, that percentage is likely much greater since goods purchases are also included in the services expenditures which account for about 90% of the total expenditures in 2012. Agencies with delegated

and/or statutory purchasing authority may purchase goods and services independently, including through service contracts. Service contracts can include up to 40% being spent on goods (unless the agency has its own delegation, such as Caltrans, in which case the 40% maximum does not apply).

NON-IT Services categories comprise the largest percentage of annual expenditures and, given that 40% or more of these expenditures could potentially be used to purchase goods, it is a category that deserves additional investigation to determine if there are opportunities for increasing the purchases of environmentally preferable and PCRC products.³ In addition, major services areas such as Health Care Services and Education and Training Services are potential targets for further investigation because together they account for almost \$8 billion in total purchasing.

SCPRS also provides information regarding the purchases by individual State agencies. The SCPRS data reported for 2012 indicates that State agencies with the highest purchases of goods and services are as follows:

- Department of Public Health \$4.3 billion
- Department of Social Services \$1.9 billion
- Caltrans \$1 billion
- Correctional Health Care Services \$687 million
- Department of Water Resources \$650 million
- Department of Corrections and Rehabilitation \$601 million
- Employment Development Department \$558 million
- State Hospitals \$553 million
- Department of Health Care Services \$504 million
- Energy Commission \$285 million

Analysis of SABRC Data

The SABRC is a joint effort between CalRecycle and DGS to implement State law requiring State agencies and the Legislature to purchase post-consumer recycled content products. SABRC includes purchasing and reporting requirements for 11 broad recycled-content product categories. For each of these products, minimum recycled content specifications have been established. It should be noted that there are major categories of products included in SCPRS that are not under the scope of the SABRC program (e.g., lumber, textiles, and concrete). This is reflected in a comparison between the total SABRC expenditures and those reported to SCPRS. As a result, total SABRC reporting of \$185 million is dwarfed by data in SCPRS, indicating that goods purchases alone are about \$1.5 billion. However, within individual categories such as “printing and writing papers”, SABRC reports higher numbers. This may be due to several factors: inconsistencies in choosing the category in which to report purchases by staff entering the data, different category definitions between the two data systems, and the limitation that SCPRS reporting is voluntary under \$5,000 (e.g., a large portion of paper procurement may be under this level).

Across the 11 products under SABRC, there is a wide range of compliance with the SABRC specifications. For some categories, the percent of purchases compliant with the SABRC specifications is very high, over 85% for compost, co-compost and mulch, and metal products. For others, there is

³ Available data does not allow delineation of how much of service contract funding is spent on goods. It is difficult to identify areas with the most expenditure on goods, as service categories appear to cover a wide array of activities (medical supplies, training, delivery, maintenance, furnishings, food services, foster care services, public safety, etc.).

room for improvement. For example, only 7% of the reported antifreeze purchases are compliant⁴ with the SABRC specifications. Improvement in the program can also be made by modifying the recycled content requirements. An example of where this could provide additional benefits for printing and writing paper is provided in a case study in Appendix 2. Additional categories such as concrete, carpet, and lumber could be incorporated into the program. Finally, products that are purchased through service contracts or through non-Statewide contracts could be better incorporated into the SABRC program. Currently, it appears that SABRC accounts for less than 8% of State product purchases.

Table 2: Total SABRC reported purchases, Fiscal Year 2011-2012

Product Category	Total SABRC Reportable Dollars	Total SABRC Compliant Dollars	% SABRC Compliant Spending	No. of Agencies Reporting in each Category
Antifreeze	239,900	18,255	7%	37
Compost, Co-compost Mulch	1,930,803	1,896,039	98%	39
Glass Products	1,557,086	929,060	59%	76
Lubricating Oils	1,605,676	743,859	46%	77
Metal Products	96,413,159	83,289,646	86%	168
Paint	935,361	113,949	12%	89
Paper Products	19,264,038	11,092,601	57%	192
Plastic Products	22,075,743	12,037,875	54%	190
Printing and Writing Paper	29,384,140	17,226,378	58%	201
Tire-derived Products	1,774,310	1,393,552	78%	41
Tires	9,976,596	1,157,368	11%	77
Totals	185,156,812	129,898,582	70%	201

Related Procurement Activities

There are several activities underway to improve upon the SABRC and EPP programs, reduce GHG emissions, or improve the tracking of purchases. These are discussed below.

Many State agencies have delegated purchasing authority, under which they have the discretion to purchase on their own behalf without using DGS Statewide contracts developed under the EPP program. DGS is considering implementation of a new procedure that includes SABRC compliance checks during the annual certification and renewal of each agency's delegated authority. Based on informal discussions to date, this could result in a modification to DGS's annual determination regarding State agencies' delegated purchasing authority, whereby DGS would inform a non-compliant agency that it needs to meet the minimum SABRC requirements. This could also lead to a requirement of additional assistance and training for that agency.

⁴ Reporting agencies indicate that recycled antifreeze is hard to find and agencies cannot control the choice of products sold or used by vendors with which they contract. Also, in some cases, state cars are sold before antifreeze needs to be changed out as many manufacturers recommend 100,000 miles for antifreeze change-out.

CalRecycle also has been working to incorporate SABRC categories and reporting into the Financial Information System for California (FI\$Cal), which is intended to enable the State of California to combine accounting, budgeting, cash management, and procurement operations into a single financial management system. In March 2013, the FI\$Cal team notified CalRecycle that SABRC requirements will be included within the FI\$Cal system, of which the first phase is scheduled for testing in 2014. The FI\$Cal team also approved the inclusion of 7 product categories (carpet, vehicles, mulch, open panel office systems, janitorial paper supplies, IT equipment, and printer/duplication cartridges) in addition to the 11 existing SABRC product categories.

DGS has taken active steps related to vehicle procurement. It implemented Executive Order S-14-09, which required all State agencies and departments (agencies) to reduce their motor vehicle fleets by 15 percent and reduce take home vehicle storage permits by 20 percent. As of the July 2010 Report⁵, agencies subject to the Executive Order have reduced their fleets by 23 percent and reduced greenhouse gases by 3,744 to 20,577 tons per year; reduced fuel consumption by over 10 percent; and increased procurement of alternative fuels. In addition, the DGS Office of Fleet and Asset Management created a Petroleum Reduction Advisory Committee to develop a plan outlined in AB 236 (Chapter 593, Statutes of 2007). DGS has compiled resulting fuel data in its 2012 Progress Report for Reducing or Displacing the Consumption of Petroleum Products by the State Fleet.⁶ Another DGS program that results in reduced GHG through energy savings is the DGS Green Building Action Plan required by Executive Order B-18-12.

DGS's Procurement Division also offers frequent EPP training for State procurement officials through its California Procurement and Contracting Academy (Cal-PCA). In collaboration with CalRecycle, annual revisions to the Basic Acquisition training course incorporate SABRC updates. DGS's longer-term plan is to convert the course and deliver EPP training as a webinar to increase attendance by State procurement staff.

In 2013, DGS re-convened the previous EPP Taskforce (which functioned from 2002 to 2009) in the form of the Performance and Environmental Standards (PES) workgroup in order to assist procurement professionals in improving policies and practices in order to achieve best value procurements. The workgroup consists of a majority of the State's environmental agencies and other State agencies with significant procurement expenditures, including those with delegated authority. The group will help ensure that EPP initiatives are consistent with the efforts and initiatives of the other environmental agencies through the State. Key goals of the PES are to:

- Provide guidance and assist procurement professionals in achieving best value, thereby reducing risk to procurement audits.
- Reduce risk in the procurement process: cost, processing time and protests.
- Create a transparent process and central clearing house for standards development.
- Increase the State's purchase of products lowering the State's carbon footprint.
- Provide a means of coordination with other State and federal agencies programs and work groups involving regulatory, research, and data collection efforts.
- Introduce policy in the State Contracting Manual.

III. CHALLENGES

Clearly, there are additional opportunities to increase the procurement of environmentally preferable and post-consumer recycled content goods. Increasing compliance in SABRC product categories that have low compliance rates, adding new SABRC product categories, increasing the recycled content specifications, and targeting consumption of goods that are reported under the IT-Services category are a few examples of actions that can be undertaken that will help further progress in meeting the State's

⁵ <http://www.documents.dgs.ca.gov/ofa/FleetReduction/FleetReduction-FinalReport-July2010.pdf>

⁶ [http://www.documents.dgs.ca.gov/ofa/ab236/PetroleumReductionStatusReport\(RevMay2012\).pdf](http://www.documents.dgs.ca.gov/ofa/ab236/PetroleumReductionStatusReport(RevMay2012).pdf)

GHG emission reduction and increased recycling goals. However, there are several challenges/issues that need to be addressed to facilitate implementation of these opportunities which are briefly described below.

1. **Data Gaps:** There are several issues with how data is reported and recorded which makes it difficult to track the volumes and types of goods purchases. For example, product purchases under construction and service contracts can be aggregated, not allowing for tracking of individual products; service contracts are not required to delineate monies expended on goods; little information is available on what is purchased through delegated authority versus through a DGS-developed State contract; State contractors do not necessarily purchase, or report on purchases of recycled-content goods; and the product categories in SCPRS generally do not distinguish the materials composition of products and/or their packaging, which makes it more difficult to determine potential GHG emissions associated with the categories.
2. **SABRC Statutory Provisions:** SABRC does not cover all products with recycling (AB 341) or GHG (AB 32) implications (such as lumber, textiles, carpet, and concrete), the minimum PCRC percentages are outdated in some categories, and some categories include mixed materials that cause difficulties in reporting. Community Colleges and the University of California system are not included.⁷ In addition, there is no enforcement mechanism for non-compliance.
3. **State Contractors:** State contractors and their subcontractors, including those on service contracts, are required to use recycled products to the maximum extent economically feasible in the performance of the contract work. According to General Contract Agreements, State contractors are required to report⁸ on the recycled content of goods offered or sold to the State. However, State contractors are not required to meet the same purchasing requirements as are State agencies (e.g., SABRC). These requirements are generally not implemented, there is no clear reporting mechanism, and it is unclear if the requirement applies to subcontractors.
 - DGS Procurement Division develops specifications/contracts for products having a Statewide contract and the Green Buying Guide hosts information on Statewide contracts that have incorporated EPP. Additionally, there are many other products that are used in State facilities and are purchased through service providers/contracts. For example, paint, carpet, and many building materials are not purchased off of statewide contracts, but rather are purchased through individual construction-related service contracts via DGS-Real Estate Services Division, other DGS entities, and delegated agencies. Building contractors cannot purchase off statewide contracts so these types of purchases are not directly impacted by the EPP statewide contracts and these contractors may or may not be including language in their solicitations that is consistent with EPP.
4. **Delegated Authority:** As noted above, many State agencies have delegated purchasing authority, under which they have the discretion to purchase from a wide variety of purchasing mechanisms. While State agencies are required to adhere to SABRC requirements regardless of the procurement mechanism used or who conducts the purchase, it is not clear if these delegated decisions adhere to SABRC requirements, including reporting, and there is no enforcement mechanism for non-compliance with the SABRC requirements.
5. **Reporting Issues:** There is potentially under-reporting of purchases in SABRC and different reporting requirements between the SABRC and the SCPRS databases. It is not clear whether all agencies purchasing off of State contracts provide that data to both SCPRS and SABRC. SCPRS has only one data field to list the United Nations Standard Products and Services Code (UNSPSC) code, which is used to identify specific products and services, so when an order contains many products, the UNSPSC code is more difficult to decipher and include in the analysis (this covers about \$850 million of purchases). There is also a lack of reporting requirements (e.g., see “State Contractors” above).

⁷ Local jurisdictions also are not required to meet the same PCRC/EPP purchasing requirements.

⁸ Excluding interagency agreements

6. **Verification of PCRC:** There is no system to track that all State agencies are requiring suppliers to verify the PCRC of their products and there is not an enforceable requirement on suppliers to provide this information for their products.
7. **Lack of Product Information:** Manufacturers and suppliers are not consistently required to disclose their products' environmental information so that specification writers, contract managers, and buyers would have readily available access to basic information on environmental performance.
8. **Cost of Recycled Content Products:** In some cases, recycled-content products may cost more than virgin and, in these cases, many employees are unaware that the recycled content products may still be purchased. Statute directs State agencies and the Legislature to purchase fewer of those more costly products or apply cost savings, if any, gained from buying other recycled products towards the purchase of those more costly products (Public Resources Code Sections 12217 and 12305.5.)
9. **Need for Additional Education:** There continues to be a need for education that reaches all State agency purchasing officials, but it also needs to go beyond and reach staff within agencies that do the ordering of materials.
10. **Emission Reduction Factors:** There is a need to develop additional emission reduction factors for key products and product categories to assist in defining GHG emission reductions associated with procurement of EPP and PCRC products.
11. **Competing Priorities:** This paper focuses on waste and GHG reductions opportunities that could be achieved through State purchasing decisions made by all State agencies and their contractors. ARB and CalRecycle acknowledge that other statutory and policy requirements regarding State purchasing may sometimes conflict or compete with these waste and GHG reduction goals, particularly with respect to environmentally preferable purchasing contracts generated by DGS. At this time, it is unclear how great an impact competing requirements might have on State purchasing to help achieve the State's waste and GHG reduction goals.

IV. POTENTIAL OPPORTUNITIES FOR SUPPORTING WASTE REDUCTION AND ACHIEVING GREENHOUSE GAS EMISSIONS REDUCTIONS THROUGH STATE PROCUREMENT

Based on the analysis of the SCPRS and SABRC data and the large volume of goods purchased for State operations, there is the potential to further leverage procurement decisions to support the State's broader waste reduction and climate change goals by increasing the procurement of environmentally preferable and post-consumer recycled content goods. However, without improved data on goods purchasing it is difficult to pinpoint what goods to target and what is the best mechanism to realize the needed changes in procurement practices. Below, we outline actions and a process for identifying a feasible path forward to capture potential opportunities for waste reduction and GHG emission reductions. While there are multiple factors and requirements that need to be addressed in purchasing decisions and these cannot be ignored, the focus in the discussion below is limited to potential waste and GHG reductions.

- **Improve Goods Procurement Data Collection and Reporting**

Data gaps need to be addressed through improvements in current reporting of goods purchased such that individual product types and amounts can be tracked by purchasing agency. Data is needed for goods purchased under delegated authority and within service contracts. This may require statutory or regulatory actions.

- **Identify High Volume Product (Goods) Categories and Associated State Agencies/Contractors/Subcontractors with Greatest Potential for Waste/GHG Reductions**

Data analysis needs to be completed once a complete data set is available. There are hundreds of different product types purchased by State agencies or indirectly through contractors and

subcontractors, and it is important to determine which products have the most potential for waste reduction and GHG emission reductions so those products and their purchasers can be targeted for further evaluation. As an initial prioritization of products, agencies, or processes with opportunities for waste reduction and GHG emission reductions, SCPRS data was used as a preliminary step to identify potential future focus areas. A total of 17 products were identified and categorized into two tiers. Ten products were identified as Tier 1 categories and are considered to be a higher priority based on synergism with other waste reduction goals, the contribution to waste disposal in California, and the availability of options for reducing waste and GHG emissions. Seven products were categorized as Tier 2 and initially given lower priority than the Tier 1 products. Table 3 lists the Tier 1 and 2 products.

Table 3: Priority Products for Evaluation with Potential for Waste and GHG Reductions

Tier 1 Product Categories		Tier 2 Product Categories
Food	Plastic Food Containers	Rock, Soil and Fines
Lumber (dimensional, engineered, pallets, plywood)	Durable and Miscellaneous Plastic Items	Mattresses
Concrete and Asphalt	Textiles (towels, sheets, uniforms, etc.)	Paper Towels, Toilet Paper
Paint		Computers, Printers, Monitors
Carpet		Batteries
Copy Paper		Photovoltaic Products
Compost and Mulch		Lubricating Oils

Appendix 1: State Purchases: AB32 Potential Opportunities for Waste Reduction and Greenhouse Gas Emissions Reductions—is an initial attempt to provide an overview of State purchasing of Tier 1 and 2 materials. Appendix 1, summarizing the Tier 1 and 2 product categories purchased by State agencies, explains why a particular product category is important from a waste/GHG perspective, identifies the amount spent on products and services for a representative year (2012), and shows the agencies making most of the purchases in the category. The information presented in Appendix 1 was developed using publically available information from the SABRC and SCPRS databases. The data presented in the Appendix 1 table is incomplete, however does provide a starting point to help facilitate further discussions on products where procurement practices and the end-of-life management of products may offer opportunities for increasing recycling and reducing GHG emissions. This information should be considered to be a “living document” and will be refined as improved data becomes available. The Appendix 1 summary table also includes some smaller agencies that are not necessarily major purchasing entities, but may purchase significant amounts of a products identified in Tier 1 or Tier 2. These smaller entities include: California Conservation Corp, California Highway Patrol, CalRecycle, Department of Forestry and Fire Protection, Department of Mental Health, Department of Parks and Recreation, Department of Fish and Game, and the Military Department. An example of this is the Department of Parks and Recreation purchasing of compost and mulch. While the dollar amount of the purchases is relatively small, they are the second largest purchaser of these materials.

- **Legislative and/or regulatory changes may be needed.**

Legislation and/or regulations may be needed in order to affect identified reporting improvements and purchasing requirements.

- **Develop Waste and GHG Emission Reduction Factors**

Having the tools to quantify waste and GHG emission reductions associated with changes in procurement practices is critical to prioritizing actions and tracking progress in achieving California's overall waste and GHG reduction goals. For products targeted for evaluation, lifecycle GHG emission reduction factors and waste reduction factors will need to be developed or updated. ARB, CalRecycle and DGS need to work together to prioritize where development of waste and emission reduction factors is most critical.

- **Identify and Implement Effective Approaches to Achieve Waste/GHG Reductions for Targeted Products**

For each targeted product, there is a need to identify potential options for adjusting or modifying procurement practices to enhance waste and GHG reductions goals. Options could include educational outreach/incentive programs, steps to improve compliance for products already having SABRC specifications, creating SABRC requirements and supporting specifications for new products, improving SABRC and SCPRS database interaction, increasing the recycled content specifications, development of mandates to ensure purchases by State agencies with delegated purchasing authority and those products purchased under service contract adhere to SABRC requirements.

APPENDIX 1. State Purchases: AB32 Potential Opportunities for Waste Reduction and Greenhouse Gas Emissions Reductions

This table is intended to help facilitate further discussion among ARB/CalRecycle/DGS and others on commodities where procurement practices and the end of life management of products may offer opportunities for waste and GHG emission reductions. It lists various commodities typically purchased by the State, explains why a particular product category is important from a waste/GHG perspective, identifies the amount spent on products and services for a representative year (2012), and shows the agencies doing the most purchasing. The table also flags gaps in our knowledge that are represented by missing information on total spent. As a first step to prioritize the list of commodities, commodities are separated into two tiers. Tier 1 commodities are considered to be a higher priority based on synergism with other waste reduction goals, the contribution to waste disposal in California, and the availability of options for reducing waste and GHG emissions.

Purchased commodities or services	Why Important?	Total Spent (2012) ⁹ SCPRS data	Key Purchasing Agencies					
			Cal-Trans	CDCR	DGS	Parks & Rec	Water Resources	Other
Tier 1								
Food	<ul style="list-style-type: none"> Food waste is 15.5% of disposal (highest category) Generates methane USEPA has identified several food categories as having high material impacts and GHG impacts 	>\$118 million		>\$100 million Purchases through DGS/PD contracts				Other top food purchasers are: Dept of Forestry and Fire Protection (est \$6 million), Dept of State Hospitals (est \$4 million) and Dept of Mental Health (est \$3.5 million).
Lumber	<ul style="list-style-type: none"> Clean dimensional lumber, 	>\$3 million ¹⁰	>\$2.5 million	>130K	Indirect purchases			

⁹ Overall, the data reported will be less than actual purchases. SCPRS reporting for purchases under \$5K is optional. Additionally, the total spent presented will be under reported because of how purchases or services are coded. If the data field for the UNSPSC code contained multiple entries some of these line items are not included in the analysis because it was not possible to match a code with a commodity.

Purchased commodities or services	Why Important?	Total Spent (2012) ⁹ SCPRS data	Key Purchasing Agencies					
			Cal-Trans	CDCR	DGS	Parks & Rec	Water Resources	Other
(dimensional, engineered, pallets, plywood)	<p>engineered lumber, and wood pallets are each > 2.5% of disposal</p> <ul style="list-style-type: none"> • Generates methane • Forest carbon sequestration is reduced when harvesting trees to produce wood products, resulting in significant GHG impact 				through construction contracts			
Concrete and Asphalt	<ul style="list-style-type: none"> • High GHG impacts in production of cement that is used in concrete. • Waste concrete composes greater than 1% of CA disposal • On USEPA list of having high materials and GHG impacts • Rubberized asphalt concrete uses waste tires and is an road surface alternative with lower GHG 	>\$4.3 million for concrete; >\$33 million for asphalt ¹¹	Purchases millions of dollars of construction services (\$2,854 million in 2009-June 2011) for transportation infrastructure (not including federal funds which were significantly more)	Purchases millions of dollars of construction services (planning for \$2,811 million in over 300 projects)	(K-12 education follows transportation in terms of construction dollars—overseen by the Div of the State Architect in DGS)		Purchases millions of dollars of construction services (\$63 million in 2010/2011) for levees and State water system.	CalRecycle >\$1.8 million of asphalt
Paint	<ul style="list-style-type: none"> • Paint is a HHW, banned from disposal • SABRC category (not compliant with targets) • Certified product is available with post-consumer recycled content that meets performance standards of virgin paint • Statewide collection program recently started that will generate more recycled paint • Recycled paint provides GHG reduction over virgin paint 	> \$3 million ¹²	>\$2.5 million		Indirect purchases through construction contracts		>\$100K	
Carpet	<ul style="list-style-type: none"> • Discarded carpet comprises 3.2% of CA disposal 	>\$800K ¹³	>\$350K		Indirect purchases through			Employment

¹⁰ Also purchased through construction projects, which may not be accounted for in this analysis.

¹¹ Also purchased through construction projects, which may not be accounted for in this analysis.

¹² Also purchased through \$160 million spent on building construction.

¹³ Also purchased through \$160 million spent on building construction.

Purchased commodities or services	Why Important?	Total Spent (2012) ⁹ SCPRS data	Key Purchasing Agencies					
			Cal-Trans	CDCR	DGS	Parks & Rec	Water Resources	Other
	<ul style="list-style-type: none"> Use of recycled plastics from carpet into new products significantly reduces GHG 				construction contracts			Development Dept >\$300K
Copy paper	<ul style="list-style-type: none"> White ledger paper and office paper are 1.9% of CA disposal. Paper with higher post-consumer recycled content (PCRC) that offers additional GHG savings. Paper is widely used in State government facilities. 	>\$5.5 million copier paper ¹⁴ >\$65 million various types of paper		>\$1 million Purchases the highest quantity via Statewide contract				Employment Development Dept (EDD) >\$1.3 million, CHP >\$300K, DMV >\$300K
Compost and Mulch	<ul style="list-style-type: none"> Commonly composted items like leaves and grass, and pruning and trimmings comprise 6.5 % of disposal in CA. Also food waste, much of which is compostable, comprises 15.5% of disposal in CA. Compost reduces GHG through avoided landfill methane emissions and improved soil quality that reduces water consumption and use of herbicides/pesticides/fertilizers. Opportunities exist to purchase landscaping plants that generate less debris and support markets for compost. 	>\$10 million	>\$10 million Purchases the most mulch/compost; large purchases likely within construction contracts		Large purchases likely within construction contracts	>\$125K		>\$90K California Conservation Corp
Plastic food containers	<ul style="list-style-type: none"> Estimated to comprise more than 1% of disposal in CA and is associated with food purchases, which are very significant State purchases. When plastic packaging is recycled or food has a longer shelf-life, there are GHG reductions. 							

¹⁴ This is likely lower than that actual amount. SCPRS only requires data on purchases over \$5K. Paper purchases may fall below this amount and not be included. Or they may be included with other office supplies and not accounted for in this analysis.

Purchased commodities or services	Why Important?	Total Spent (2012) ⁹ SCPRS data	Key Purchasing Agencies					
			Cal-Trans	CDCR	DGS	Parks & Rec	Water Resources	Other
Durable and misc. plastic items	<ul style="list-style-type: none"> Comprise 1.9% of disposal in CA. Recycled plastic products provide reduction in GHG emissions and close the loop that makes recycling viable. Some recycled plastic products may replace a material, such as wood, and provide GHG reduction and close a loop for plastics recycling. If not recyclable (unable to be disassembled, lack of labeling that identifies resins), standards could be created to make recycling more feasible. 		80% of total spend for plastic is attributed to plastic bags between 2009-2013 per eSCPRS report. Caltrans purchasing 15% of the bags.	80% of total spend for plastic is attributed to plastic bags between 2009-2013 per eSCPRS report. CDCR purchases 21% of the bags.	Large purchases likely within construction contracts			
Textiles (towels, sheets, uniforms, etc.)	<ul style="list-style-type: none"> Textiles are 2.2% of disposal in CA. Towels, linens, uniforms, blankets, safety apparel, etc. are purchased by the State in significant amounts. More durable textiles and recycling these materials can reduce GHG emissions. 	>\$20 million	>\$ 5 million	>\$ 10 million				> \$2.5 million Military Dept
Tier 2								
Rock, soil and fines	<ul style="list-style-type: none"> Comprises 3.2% of CA disposal. The extraction of these materials uses a lot of energy (GHG) Alternatives materials exist that reduce the need for virgin materials 	>\$2.5 million ¹⁵	>\$1.8 million Caltrans likely purchases under A&E contracts as well		Large purchases likely within construction contracts		DWR likely purchases under A&E contracts	
Mattresses	<ul style="list-style-type: none"> Mattresses are a portion of bulky items that comprise 3.5% of disposal. 85% of mattresses (by weight) can be readily reprocessed into useful secondary resources. Material recycling is estimated to offset 45% of GHG emissions from production and landfill of mattresses and box springs. 	>\$1.7 million		>\$1.3 million				>\$100K Dept of State Hospitals, >\$100K Dept of Mental Health

¹⁵ Many purchases are likely made through construction related contracts and are not accounted for in the totals.

Purchased commodities or services	Why Important?	Total Spent (2012) ⁹ SCPRS data	Key Purchasing Agencies					
			Cal-Trans	CDCR	DGS	Parks & Rec	Water Resources	Other
	<ul style="list-style-type: none"> Recycling is currently low. 							
Paper towels, toilet paper	<ul style="list-style-type: none"> Misc. paper is more than 2.8% of CA disposal (there isn't a category for janitorial papers). Janitorial papers are very suitable for high PCRC (well above the 30% specified in the SABRC category for all paper products). Currently there doesn't appear to be a State contract or standards in place for these products to help ensure they are purchased with high PCRC. 	>\$6 million		>\$3.6 million	\$1 million (DGS)			>\$350K State Hospitals
Computers, printers, monitors	<ul style="list-style-type: none"> Computers, printers, monitors are a very significant category of expenditure by State agencies. These materials are banned from landfill disposal due to their toxic components. As a large purchaser, the State is able to foster advancements in sustainability. Use of recycled content materials reduces GHG emissions and recycling these products saves rare earth metals. 	>\$62 million	>\$15 million	>\$3.2 million			>\$3.2 million	>\$5.4 million CHP >\$4.2 million Correctional Health Care Services
Batteries	<ul style="list-style-type: none"> Batteries are banned from landfill disposal in CA, but are still disposed. More products (e.g., bathroom fixtures, power tools, small electrical devices) use batteries so their use increases. GHG emissions can be reduced through the selection of longer lasting batteries. There are a few eco-labels that cover batteries (e.g. Nordic Swan). 	>\$1.6 million ¹⁶	>\$400K	>\$500K	>\$86K		>\$82K	>\$164,816 Correctional Health Care Services >\$62K CHP
Photovoltaic products	<ul style="list-style-type: none"> Many State facilities are installing PVs have hazardous components 	>\$1.3 million	>\$400K	>\$130K		>\$300K		>\$150K State

¹⁶ Many batteries are purchased with other supplies and not included in analysis.

Purchased commodities or services	Why Important?	Total Spent (2012) ⁹ SCPRS data	Key Purchasing Agencies					
			Cal-Trans	CDCR	DGS	Parks & Rec	Water Resources	Other
	<p>and are banned from landfill disposal (a type of electronic waste).</p> <ul style="list-style-type: none"> • Policies can reduce the future burden of managing these products. • Similar to other electronic products, recycled content and recyclable products will reduce GHG emissions and provide for the capture of rare earth metals. 							Hospitals >\$115 Fish and Game
Lubricating Oils	<ul style="list-style-type: none"> • Recycled used motor oil is a SABRC product category with non-compliance participation rates (46%). • Purchasing recycled used motor oil supports recycling and has lower GHG emissions as compared to virgin motor oil. • 29 % of total spend for lubricating oil products are attributed to fuel oil, 24% pump lubricating oils, 16% engine oil and less than 3% synthetic oils between 2009-2013. 	>\$380K ¹⁷	Caltrans purchases <2% of engine oil	>\$95K			>\$100K	>\$128K CHP

¹⁷ Lubricating oils are probably part of maintenance services and to do appear in this value. The SABRC programs indicate \$1.6 million spent on this category.

APPENDIX 2. CASE STUDY – CURRENT PRINTING AND WRITING PAPER PROCUREMENT AND GHG EMISSIONS

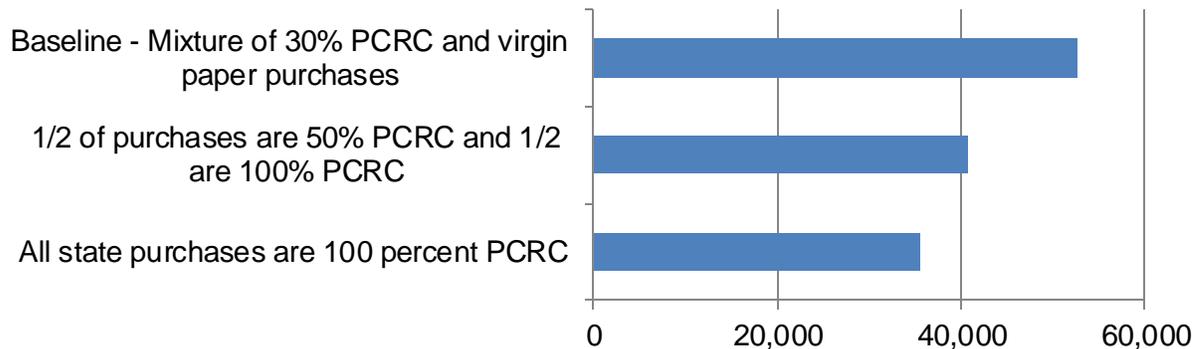
The following case study is provided to illustrate how a change in the State’s procurement practices can result in GHG emission reductions and increased market demand for recycled content materials.

According to SABRC, the State spent \$29 million in 2011 on printing and writing paper procurement, of which only \$17 million (approximately 366,750 cases) was spent on SABRC-compliant paper (at least 30% post-consumer recycled content (PCRC), see Table 3)¹⁸. If the State increases procurement of printing and writing paper that has a higher percentage of PCRC, it will realize a reduction in the carbon footprint of State’s paper procurement, as shown in Chart 3.

Table 3. SABRC Data for Printing and Writing Paper, from fiscal year 2011-2012

Total SABRC Reportable Dollars (Million \$)	Total SABRC Compliant ¹ Dollars (Million \$)	Non-Compliant ¹ Expenditures Dollars (Million \$)
29.4	17.2	12.2
1. * “Compliant” refers to the paper having at least 30% post-consumer recycled content (PCRC)		

Chart 3 - State Writing and Printing Paper Purchases, Metric Tons CO2 Equivalent (2011)



Business as Usual Paper Procurement GHG Emissions

Based on the 2011 SABRC data, 9,169 tons of noncompliant paper and 12,991 tons of compliant, minimum 30% PCRC, paper was purchased. The GHG emissions associated with the 2011 paper procurement are approximately 52,646 MTCO_{2e}.

¹⁸ Once FISCAL is operating, state agencies will have increased abilities to report specific PCRC levels which should result in improved reporting and enable better estimates of GHG emissions from the State’s procurement.

Potential GHG Emission Reductions from changes in Paper Procurement

Scenario 1: If half of all State agencies' copy paper purchases contain 50% PCRC and half of the purchases contain 100% PCRC, the total estimated GHG emissions would be 40,709 MTCO_{2e}. This represents a 23% reduction in GHG emissions (11,937 MTCO_{2e}) from the emissions associated with the State's paper procurement in 2011, and would result in market demand for approximately 12,000 tons of recycled feedstock. This is equivalent to 1,360,766 gallons of gasoline saved¹⁹. This scenario, which would increase market demand for recycled content fiber, illustrates how a change in the State's procurement practices can result in GHG emission reductions.

Scenario 2: If all State agencies copy paper purchases contain 100% PCRC, the total estimated GHG emissions would be 35,512 MTCO_{2e}. This represents a 33% reduction in GHG emissions (17,133 MTCO_{2e}) from the emissions associated with the State's paper procurement in 2011, and would result in market demand for approximately 18,000 tons of recycled feedstock. . This is equivalent to 1,953,187 gallons of gasoline saved²⁰. This scenario, which also would increase market demand for recycled content fiber, illustrates how a change in the State's copy paper procurement practices can result in GHG emission reductions.

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¹⁹ <http://www.arb.ca.gov/cc/factsheets/1mmtconversion.pdf>

²⁰ <http://www.arb.ca.gov/cc/factsheets/1mmtconversion.pdf>

Table 4 contains a list of agencies or departments that have the greatest opportunity to reduce GHG emissions from paper procurement based on the volume of non-compliant paper procurement.

Table 4. Top 15 State entities with the most non-compliant expenditures (printing and writing paper, fiscal year 2011-2012)

Department	Total SABRC Reportable Dollars (Million \$)	Total SABRC Compliant Dollars (Million \$)	% SABRC Compliant Spending	Non-compliant expenditures (e.g., virgin paper) (Million \$)
California State University Chancellor's Office	4.0	1.8	45%	2.2
Department of General Services	7.6	6.0	79%	1.6
Department of Justice	2.5	1.3	50%	1.3
State Controller's Office	2.0	0.8	42%	1.1
California Medical Facility	0.9	0.1	10%	0.8
California Highway Patrol	0.8	0.1	13%	0.7
Prison Industry Authority	0.6	0.05	8%	0.6
Department of Industrial Relations	1.3	0.8	61%	0.5
State Board of Equalization	0.6	0.3	47%	0.3
California State Library	0.3	0.007	2%	0.3
Valley State Prison for Women	0.3	0.1	34%	0.2
California Department of Transportation	0.7	0.5	75%	0.2
California Department of Consumer Affairs	0.3	0.2	58%	0.1
California Public Employees Retirement System	0.4	0.3	66%	0.1
Department of Motor Vehicles	0.8	0.7	85%	0.1

Another factor to take into consideration when identifying opportunities is where the largest amounts of goods or commodities are purchased. As noted earlier, total expenditures for a given commodity are not readily extractable from the publically available data. However, as a surrogate, one can assume that if an agency has high expenditures, there is a good possibility that a portion of monies is expended on goods. Below is a list of the top 15 State agencies purchasing copy paper based on the SCPRS report for 2012. The total among all agencies was \$5.7 million. (SCPRS reporting is optional for purchases less than \$5,000 so it doesn't include all purchases or purchases of copy paper captured in other categories). Differences appear which could be attributed to different years, different papers being included in categories, and missing purchasing information.

Table 5. Top Purchasers of Copy Paper, 2012 (SCPRS)

<u>Department</u>	<u>Total Spent Million \$</u>
Employment Development Department	\$1.3
Department of Corrections and Rehabilitation	\$1.0
California Highway Patrol	\$0.4
Department of Motor Vehicles	\$0.3
Department of Justice	\$0.3
Department of Transportation (Caltrans)	\$0.2
Department of Rehabilitation	\$0.2
Franchise Tax Board	\$0.2
Department of Industrial Relations	\$0.2
Board of Equalization	\$0.2
Department of Public Health	\$0.2
Air Resources Board	\$0.1

Paper Purchases Overall

The total spent in the paper category in 2012 was about \$65 million among 42 agencies. Table 6 shows the agencies that spent the most on a broad range of papers. Paper-types include: copy paper, forms, books, and janitorial supplies. It does not include printing orders and newspaper ads, which are about \$19 million.

Table 6. Top Purchasers of Papers, 2012 (SCPRS)

<u>Department</u>	<u>Total Spent Million \$</u>
Department of Social Services	\$35.9
Department of General Services	\$10.1
Department of Corrections and Rehabilitation	\$5.6
Employment Development Department	\$1.6
California Victim Compensation and Government Claims Board	\$1.5
Correctional Health Care Services, formally (Prison Health Care Services)	\$1.2
California Highway Patrol	\$1.0
Department of Motor Vehicles	\$0.8
Franchise Tax Board	\$0.8
Department of Transportation(Caltrans)	\$0.7

Addressing Concerns with Purchasing PCRC Paper

One concern with purchasing high PCRC paper is the issue of cost. However, by purchasing through the State contract, the cost issue can be minimized. For example, State contract offers two levels of PCRC paper: Type I (30 - 50% PCRC) and Type II (95 - 100% PCRC). The contract prices for Type I paper are between \$26.14 and \$34.27 per case. The contract prices for Type II paper are between \$32.17 and \$47.72 per case. There are many options available for State agencies. For example, CalRecycle purchases 100% PCRC paper from the State contract for \$37.63 per case.

Although high PCRC paper products may be more costly than virgin products in some cases, there are also examples demonstrating that purchasing paper with high PCRC can be more cost-effective. In cases where high PCRC paper products are more expensive than similar virgin paper products, the State still encourages buying recycled. CA Public Contract Code 12217.(c) states that, “If a recycled product, as defined in subdivision (h) of Section 12200, costs more than the same product made with virgin material, the State agency shall, if feasible, purchase fewer of those more costly products or apply the cost savings, if any, gained from buying other recycled products towards the purchase of those more costly products to meet the solid waste diversion goals of Section 41780.” By purchasing high PCRC paper products, State agencies have the opportunity to save money while also reducing GHG emissions.

Another concern with purchasing paper with high PCRC is the transportation of recovered paper to mills. While it is important to minimize transportation, both upstream and downstream, in all aspects of the paper product industry, literature suggests that Life Cycle Analysis (LCA) studies show that even after the energy used to collect, transport, and process recovered paper is accounted for, recycled paper uses much less energy overall than virgin paper (Environmental Paper Network, 2013).

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