

California's Green Chemistry Initiative

Expanding Pollution Prevention

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Pollution Prevention and
Green Technology**



Green Chemistry Final Report - Policy Recommendations

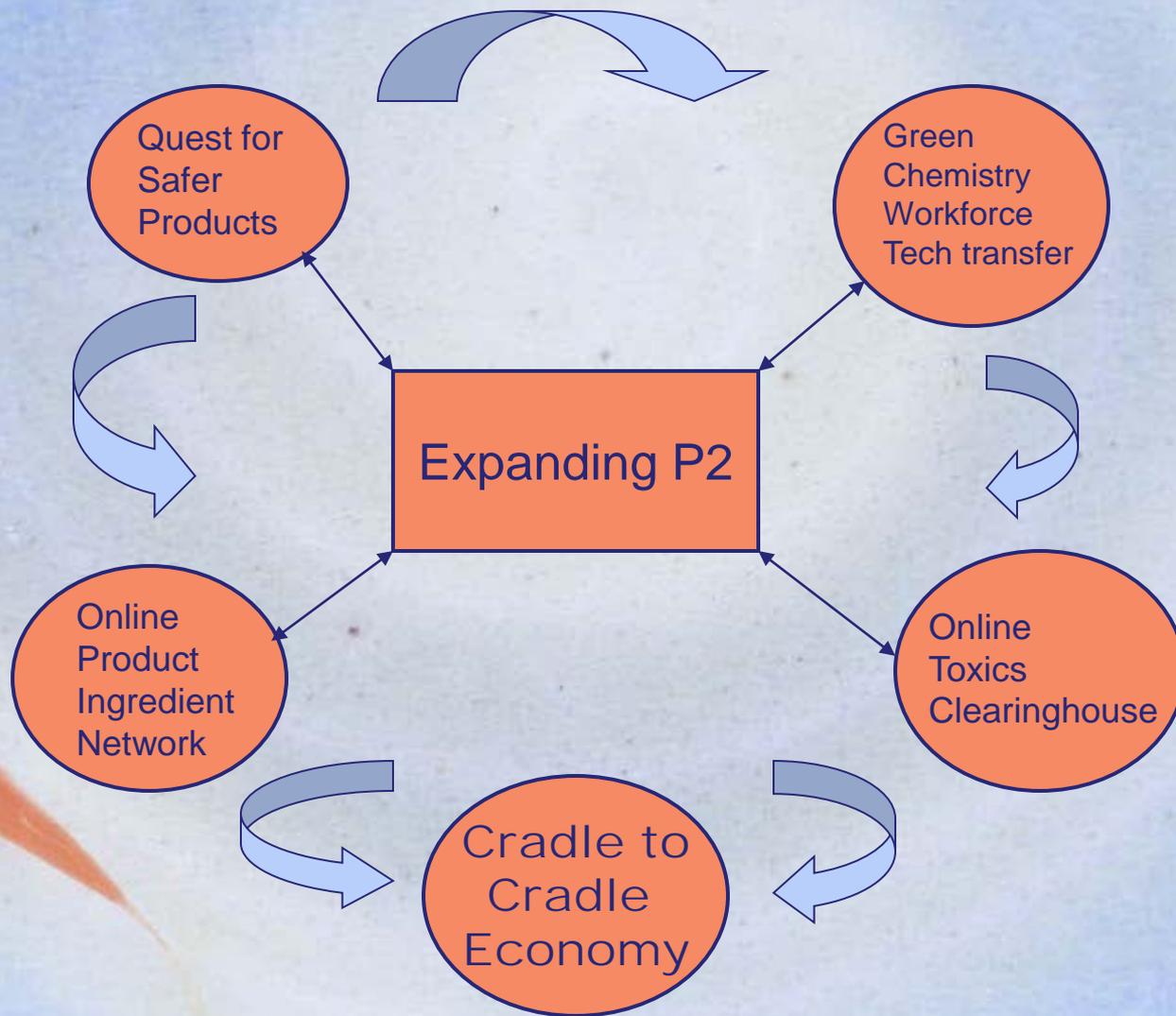
- 1. Expand Pollution Prevention**
- 2. Develop Green Chemistry Workforce, Education, Research and Tech Transfer**
- 3. Create an Online Product Ingredient Network**
- 4. Create an Online Toxics Clearinghouse**
- 5. Accelerate the Quest for Safer Products**
- 6. Move Toward a Cradle-to-Cradle Economy**

Green Chemistry Final Report – Expand Pollution Prevention

Key recommendations include:

- **Expand pollution prevention program**
- **Modernize programs**
- **Include life cycle thinking and processes**
- **Adopt environmentally preferred technologies and practices to guarantee market for green technologies**

Green Chemistry Initiative - Expanding P2



Pollution Prevention and Green Technology

- Pollution prevention is reducing or eliminating waste at the source by modifying production processes, promoting the use of non-toxic or less-toxic substances, implementing conservation techniques, and re-using materials rather than putting them into the waste stream.
- The Office administers mandatory programs and voluntary activities that protect public health and the environment from the adverse effects of hazardous waste and products.

Key Program Areas

- Pollution Prevention Branch
 - Implements Hazardous Waste Source Reduction and Management Review Act, (SB 14 and SB 1916)
 - Mandatory pollution prevention planning program for large quantity generators of hazardous waste (SB 14)
 - Sector-based voluntary technical assistance and outreach programs (SB 1916)
 - Advisory Committee coordination
 - Green Business Program Support

Key Program Areas

- Green Technology Branch:
 - Evaluates and provides objective information on innovative environmental technologies through research, demonstration projects, data analysis, and technology performance evaluation.
- Toxics in Product Branch:
 - Focus on reducing toxic chemicals in products through implementing statutory restrictions, regulations, research, education and outreach efforts to industry, local partners, and stakeholders.

Pollution Prevention and Green Technology

- **Technical assistance and support** – assist business in identifying and implementing measures that reduce or eliminate pollution at its source.
- **Partnerships** - Partnership programs enable flexible, collaborative, market-driven solutions that can deliver measurable environmental results.
- **Education and outreach** – clearinghouse of tools (real solutions to real problems)
- **Facilitator and convener** – bring together federal, state, local government, NGOs, business and industry to collaborate on P2 issues and programs

California Green Business Program: Collaborative Efforts Expanding P2

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What is Green??



Key Green Business Program Elements

- ❖ “Beyond Compliance”: improve compliance, promote voluntary pollution prevention, uniform standard for “green” in each sector
- ❖ Comprehensive: pollution prevention + energy and water conservation + solid waste
- ❖ Small to medium consumer-oriented businesses typically without dedicated environmental management staff

How It Works

- Specific checklists, with mandatory and optional measures, are developed for each business sector, e.g.
 - Restaurants: Grease Interceptors/Traps, Floor Mat Washing, Recycling, Food Waste Composting, Janitorial Chemicals, To-Go Containers
 - Auto: Aqueous Parts Washers, dry floor clean-up and hydrophobic mops, recycling, alternative chemicals, floor washing.
 - Office: IPM, Pressure Washing, Janitorial Chemicals, Exterior Storage, recycling, food waste.

GBP Certifications:

- Auto Shops
 - Auto Body
 - Architects
 - Construction /Remodelers
 - Commercial Buildings
 - Dental
 - Garment Cleaners
 - Hotel/Hospitality
 - Janitorial
 - Labs
 - Landscape
 - Laundromats
 - Medical Facilities
 - Office/Retail
 - Plumbers
 - Printers
 - Painters
 - Restaurants
 - Salon/Beauty Shops
 - Schools
 - Wineries
- In progress:
- Nail Salons
 - Property Managers

Partnerships are key

- Hazardous Materials and Waste
- Air Quality Management District
- Storm Water Agencies
- Wastewater Agencies
- Water Provider/Conservation Agency
- Energy Utility
- Solid Waste / Recycling
- Trade/Business Organizations
(e.g. Auto Service Councils, Chambers of Commerce)

Local Coordinator Role

- ❖ Direct liaison with businesses; leads them through the process; manages recognitions and marketing, *establishes relationships*
- ❖ Organizes participation of partner agencies and utilities
- ❖ Verifies that businesses are in compliance
- ❖ Schedules on-site verification audits

DTSC's Role

- Provides development of technical support resources:
 - Training tools
 - BMP guidance documents
 - Fact Sheets
 - Videos
 - Links to state and national resources (e.g. P2Rx)
- Statewide coordination and outreach
- Tracking and Metrics Database development and administration

Why does it work?

- **Partnership:**
 - Multi-agency, multi-media approach delivers value to the business and supports compliance and performance. Leverage's a business's interest in one area to achieve results in other areas.
- **Funding:**
 - Free to local businesses. Some jurisdictions considering nominal fees.
- **Credibility:**
 - Transparent criteria, audited practices
 - Certification from government agencies
- **Performance:**
 - Outcomes are measured
 - Cost/Benefit of behavior changes can be evaluated
- **Consumer Demand:**
 - Market advantage to meet increasing demand for “green” products and services

Tracking and Metrics Database

Green Business Certification - Windows Internet Explorer

http://www.greenbusinessca.org/dashboard/

Green Business Certification

Green Business Program [logout Dashboard](#)

Reports | Program Profile | Search

Environmental Scorecards

1. [Report by Program or Sector](#)
2. [Company Report](#)

[Applicant Email Text](#)
[Auditors](#)
[Inspectors](#)
[Checklist Set Up](#)
[Measures](#)

Quick Search

[Advanced Search](#)

Program Overview

Recognized Businesses 2369

Businesses requiring:

[Directory Review](#) 2

[Renewal](#) 0

Applications in Process 664

Applicants requiring:

[Background Check](#) 283

[Checklist Submission](#) 427

[Checklist Approval](#) 45

[Phone Consult](#) 462

[Site Visit](#) 532

[Audit](#) 638

[Compliance Check](#) 623

[Final Approval](#) 4

Rejected Applications 79

Applicant List View

Program Overview for Applications in Process

First ◀ 1 2 3 4 5 6 7 8 9 10 11 ▶ Last [New Window](#) [Export](#)

Company	City	Enrollment Date	Checklist	Checklist Submittal	Phone Consult
Cogito Creative Works	Sonoma	5/8/2010	Applicant action required		Pending
Rainbow Worms	San Lorenzo	5/7/2010	Applicant action required		Pending
Synaptics, Inc	Santa Clara	5/7/2010	Applicant action required		Pending
R. Paul Bonnar, Attorney at Law	Pleasant Hill	5/7/2010	Applicant action required		Pending
Spiral Hand Floral & Event Design	San Francisco	5/6/2010	Applicant action required		Pending

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Embedded Calculations

Replace all T-12 fluorescent lighting with energy-efficient T-8 or T-5 fixtures with electronic ballasts or other equivalent efficacy lighting.

Savings: kwh/yr, GHG reductions

Inputs: # T-12s replaced with T-8s

Calculation

$$\text{kwh/Yr} = \# \text{ of lamps} \times 22.88 \text{ kwh/lamp/yr}$$

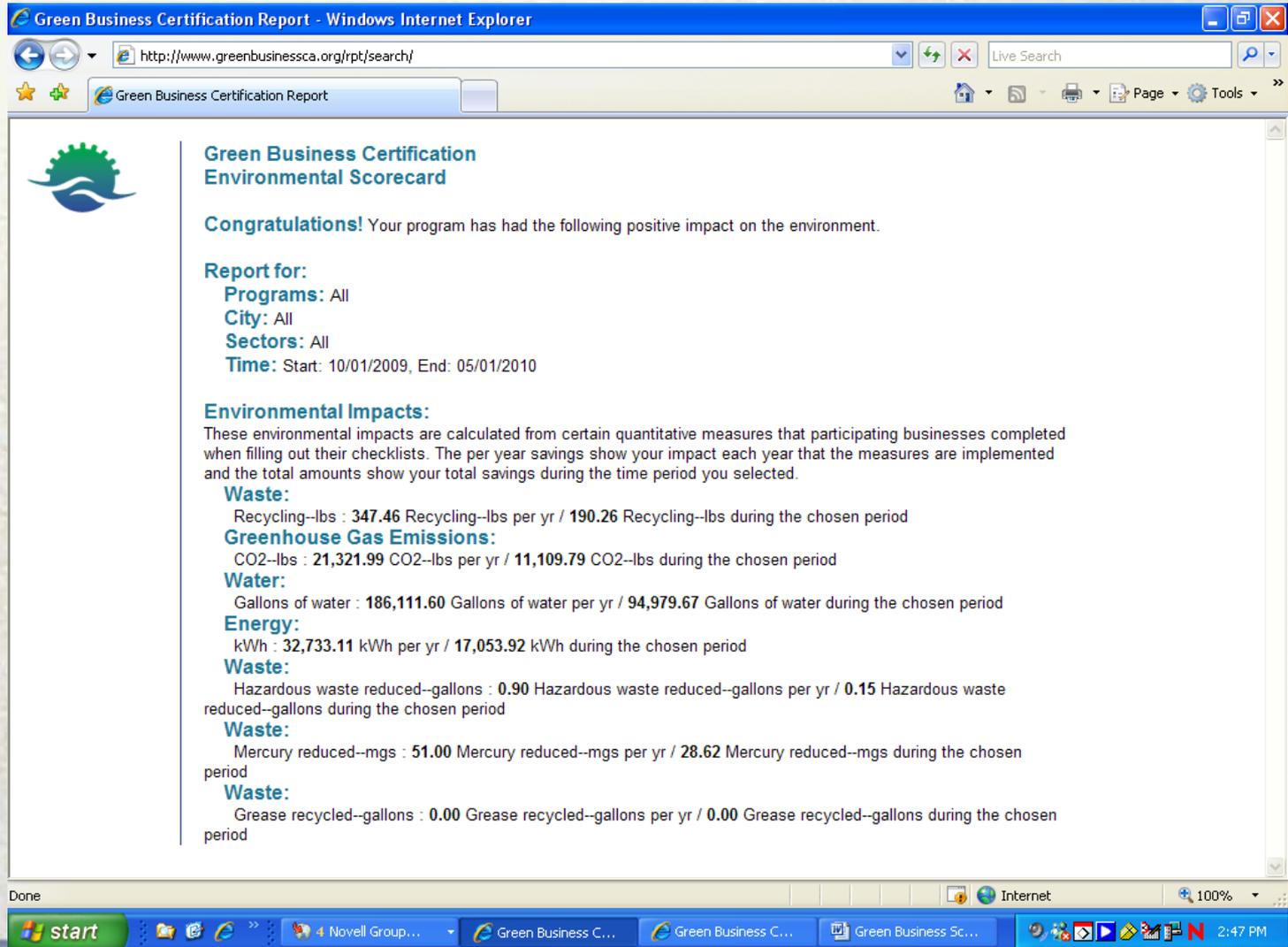
Assumptions/Conversions:

*Energy Savings per T-8 conversion = 22.88
kwh/lamp/yr (<http://eega.cpuc.ca.gov/deer/>)*

Estimating Results: Santa Cruz County Annual 199 GBs

Waste Diverted from Landfill (cu. Ft.)	242,000 or 360 Refuse Trucks
Air Pollution Prevented (lbs)	520,000
Gallon of Water Conserved (gal)	24.5 million
Haz. Materials / Wastes Reduced (lbs)	18,850 or 342 drums
kWh Reduced	5.4 million
kW Reduced	944
Energy savings equivalent to powering x homes	almost 1,000 homes
CO ₂ Saved (lbs./yr)	Almost 6 million
Dollars saved after conservation efforts annually	\$707,500

Measuring Success



Green Business Certification Report - Windows Internet Explorer

http://www.greenbusinessca.org/rpt/search/

Green Business Certification Report



Green Business Certification Environmental Scorecard

Congratulations! Your program has had the following positive impact on the environment.

Report for:
Programs: All
City: All
Sectors: All
Time: Start: 10/01/2009, End: 05/01/2010

Environmental Impacts:
These environmental impacts are calculated from certain quantitative measures that participating businesses completed when filling out their checklists. The per year savings show your impact each year that the measures are implemented and the total amounts show your total savings during the time period you selected.

Waste:
Recycling--lbs : **347.46** Recycling--lbs per yr / **190.26** Recycling--lbs during the chosen period

Greenhouse Gas Emissions:
CO2--lbs : **21,321.99** CO2--lbs per yr / **11,109.79** CO2--lbs during the chosen period

Water:
Gallons of water : **186,111.60** Gallons of water per yr / **94,979.67** Gallons of water during the chosen period

Energy:
kWh : **32,733.11** kWh per yr / **17,053.92** kWh during the chosen period

Waste:
Hazardous waste reduced--gallons : **0.90** Hazardous waste reduced--gallons per yr / **0.15** Hazardous waste reduced--gallons during the chosen period

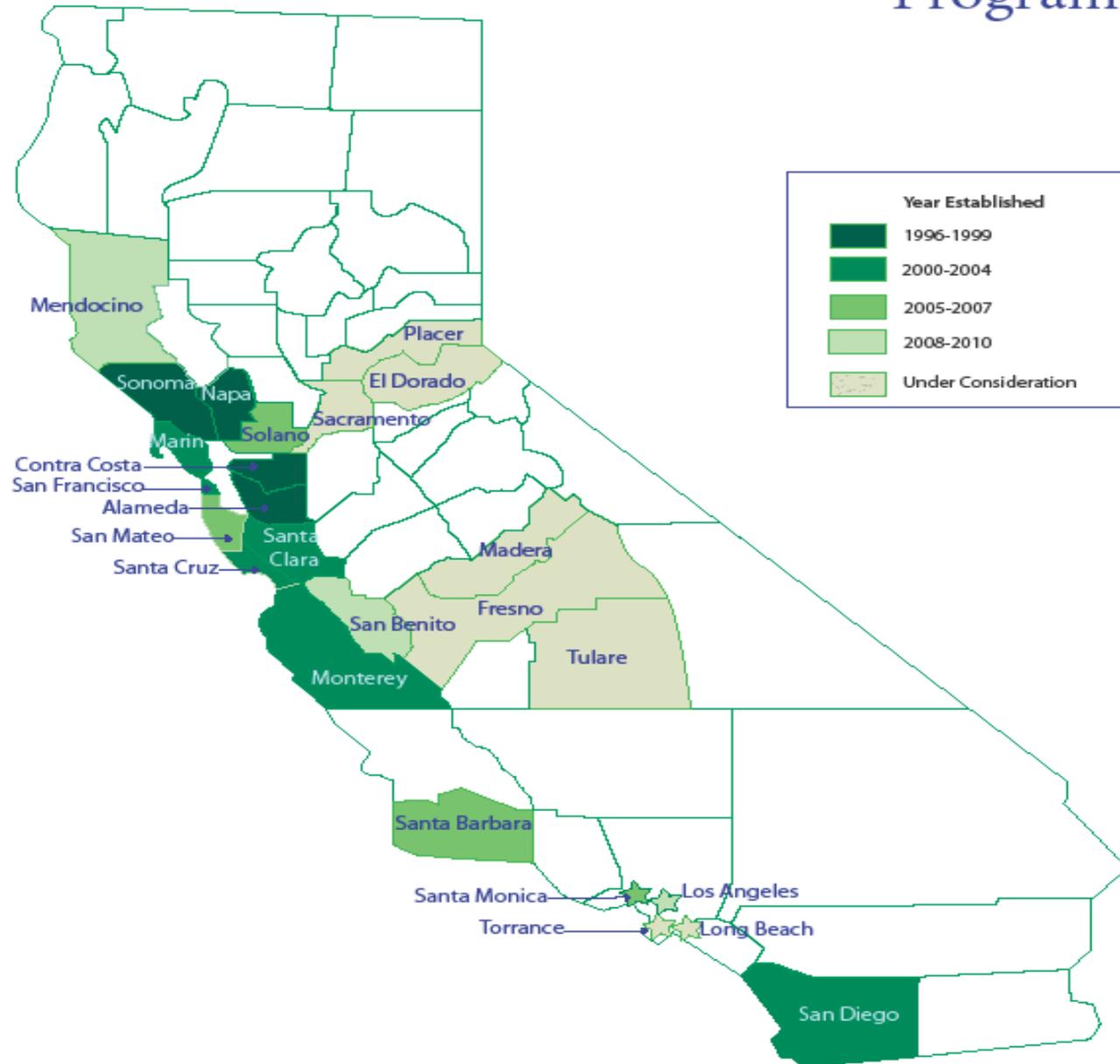
Waste:
Mercury reduced--mgs : **51.00** Mercury reduced--mgs per yr / **28.62** Mercury reduced--mgs during the chosen period

Waste:
Grease recycled--gallons : **0.00** Grease recycled--gallons per yr / **0.00** Grease recycled--gallons during the chosen period

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Establishment of California Green Business Programs



Questions for Expanding P2

- What efforts and activities can DTSC undertake to further promote green chemistry principles, life cycle thinking, alternatives analysis and cradle to cradle approaches?
- How can AA be used outside of AB 1879 rulemaking process to advance green chemistry?
- How can pollution prevention efforts be measured?