

CALIFORNIA GREEN CHEMISTRY INITIATIVE

Green Chemistry Initiative Overview

MAUREEN GORSEN, DIRECTOR

Department of Toxic Substances Control California Environmental Protection Agency



Old Approach: Cradle to Grave

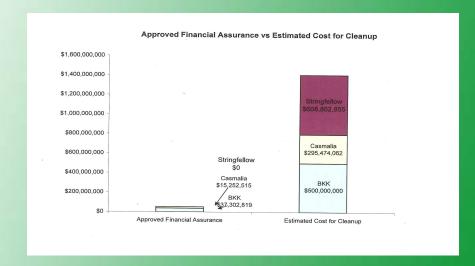
- 20th Century—Single Medium (air, water, land)
- For the past 40 years, we have focused on end-of-pipe or after product use
 - Discharges
 - Emissions
 - Wastes





The Legacy

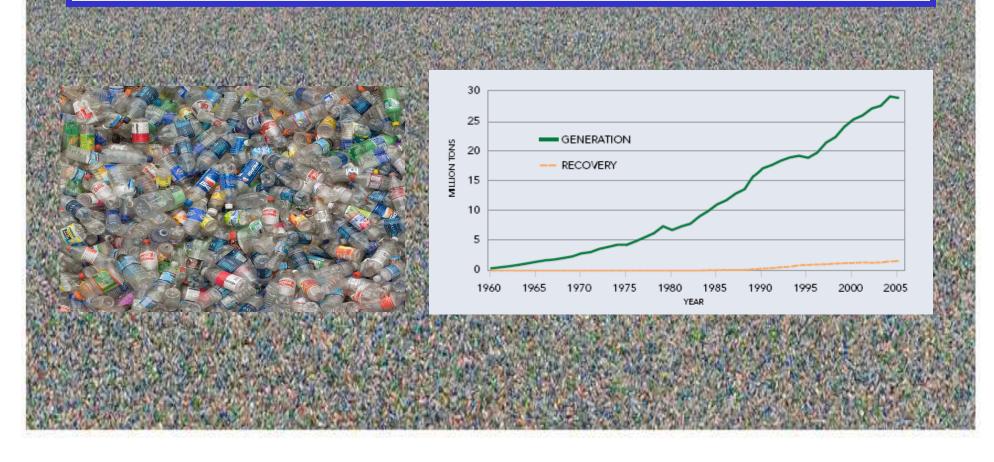
 Yesterday's solutions are tomorrow's burdens



- Three legacy sites:
 - Estimated cleanup costs
 - > \$1.4 Billion (General Fund)
 - Long-term public stewardship

The Problem:

Two million plastic beverage bottles are discarded every five seconds in the U.S. Only 3% of plastic is recycled in U.S.





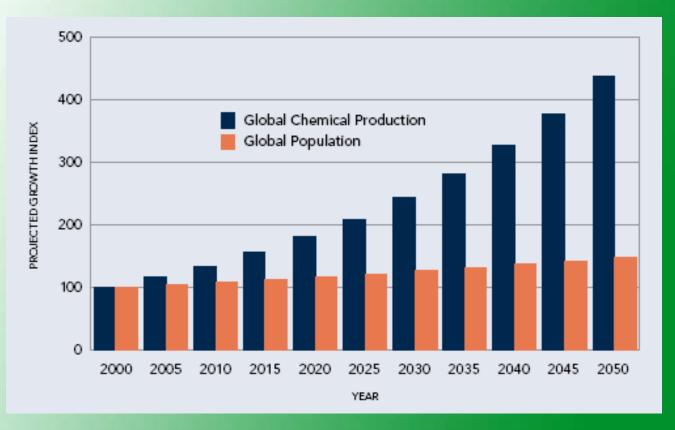
The Problem:

426,000 cell phones retired each day in U.S.





Global Chemical Production Doubling Every 25 Years





NEW California Laws Banning Sale of Toxic Products

- Ban on lead in jewelry
- Ban on toxics in packaging
- Ban on mercury in certain devices
- RoHS ban on covered electronics



The Problem: Toxic Waste

- The Solution: Green Chemistry
- The opportunity:
 \$16 trillion global market for green materials





What is Green Chemistry?

The consideration of public health and environmental effects of chemicals—during the design of products and processes

 A fundamentally new approach to environmental protection



New Approach: Cradle to Cradle

 21st Century—Multi-media, life-cycle

 Through design and innovation, we can reduce the use of harmful chemicals, generate less waste, and use less energy



The Draft Goal

California is a leader in innovation, use, and manufacture of safer, ever more environmentally benign chemicals and products.





PHASE 1: Listening April through December 2007

- **✓ Conversation with California**
 - 57,000 blog hits
 - 411+ pages of ideas

Green Chemistry Information Exchange

- √ Symposia and Meetings
 - Green Chemistry I, II, and III
 - Nanotechnology I and II
 - Biomonitoring
 - OEHHA Green Chemistry
 - Stakeholder
- **✓ Phase 1 Options Report**
 - 818 options
 - 8 chapters



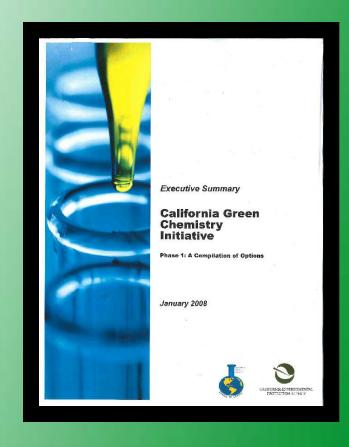
- **√** Key Elements
 - Align existing state programs



Phase One Report

Please browse:

www.dtsc.ca.gov/PollutionPrevention/ GreenChemistryInitiative





PHASE 2: Analysis January through June 2008

- Objective: evaluate policy alternatives and recommend a framework for California
- Process
 - Public
 - Transparent
- Inclusive
- Effective



Community Groups

- Participants
 - Government
 - Environmental groups
 - Industry, Business, and Labor groups
 - Public
- Deliverable: "Recommendations Report" to the Secretary and Governor—by Summer of 2008



PHASE 2:Three Concurrent Tracks



- Science Advisory Panel
- Key Element Teams
- Draft Straw Conceptual Framework



Science Advisory Panel





- 38 recommendations
- Balanced approach
- Demand and supply-side
- Address data, safety, and technology gaps



17





Science Advisory Panel Options



Supply side

- Instilling green chemistry into education
- Supporting research and innovation in green chemistry and engineering
- Building green chemistry capacity through development of tools, methodologies and strategies for developing greener chemicals
- Providing incentives to industry and recognition

Demand side

- Identifying and prioritizing chemicals or chemical uses of concern
- Developing, improving and effectively employing regulations
- Developing incentives to boost demand for green chemistry



Key Elements

Key Elements align with and build on existing State programs.



- Include Green Chemistry principles in an Environmental Education Initiative
- Train a new generation of scientists and engineers
- Strengthening consumer protection laws
- Expand California's pollution prevention program
- Disseminate information on toxic chemicals and empower consumers to make informed choices.
- Account for chemical toxicity and impacts in state procurement decisions



Comprehensive State Policy Framework Recommendations

Cossissy Soon!