

# Amplifying and Leveraging the Imperative of Green Chemistry

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## Short Outline for Short Presentation

- **What characterizes EPA's efforts in promoting green chemistry?**
- **Partnerships and Possibilities: Grounding in Economic Performance**
- **Discussion: Collaborative Opportunities**

# Mission to Accomplish

- 3 simple points
  - Green Chemistry is a key value proposition for business and regional economic development
  - EPA's programs offer opportunities to leverage green chemistry to realize these value propositions
  - There are a remarkable number of programs in other Federal and State agencies poised to support green chemistry and business development
- The rest depends on us.....

# Green Chemistry Scope

- ❖ Chemical product design and development
  - Design of new or redesign of existing chemical products with low hazard & environmental impact
- ❖ Chemical product manufacture & processing
  - Minimize hazardous chemicals and other materials use, minimize waste generation, minimize energy and water use, maximize yield
- ❖ Chemical (and material) supply chains

# Green Chemistry: Sources of Value Propositions

*Improving Economic and Environmental Performance*

- ❖ Cost Savings (materials & energy)
  - ❖ energy savings
  - ❖ water savings
  - ❖ pollution prevention (hazardous waste handling)
- ❖ New Products (sources of revenue)
  - ❖ sustainable/sustainability products
  - ❖ new performance characteristics
- ❖ Managing/transforming waste
  - ❖ liability -> asset



# EPA's Green Chemistry Program

- The Presidential Green Chemistry Challenge was established to *recognize* and *promote* fundamental and innovative chemical technologies that accomplish pollution prevention through source reduction and that are useful to industry.
- Green Chemistry encompasses all aspects and types of chemical processes—including synthesis, catalysis, analysis, monitoring, separations, and reaction conditions—that reduce risk to human health and the environment relative to the current state of the art.

# Presidential Green Chemistry Challenge

- Annual awards to recognize the most innovative green chemistry technologies & to document quantified benefits
  - 2012 Awards marked the 17<sup>th</sup> year
    - 88 Winners from 1,492 nominations
  - 2013 and beyond:
    - Shifting emphasis beyond awards ceremony to expanding upon innovations of nominees
    - Amplifying innovation by leveraging technology/manufacturing initiatives at the federal/state/local level, and through private sector interest(s).
    - EPA is working actively to help partner green chemistry innovators with supply chain opportunities, leveraging existing assistance programs.

# Green Chemistry Awards: Searchable by industry/technology/year

Presidential Green Chemistry Challenge Award Recipients by Industry Sector | Green Chemistry | - Windows Internet Explorer pro

http://www2.epa.gov/green-chemistry/presidential-green-chemistry-challenge-award-recipients-industry-sec

## Presidential Green Chemistry Challenge Award Recipients by Industry Sector

On this page:

Index of Presidential Green Chemistry Challenge Award winners by industry sector.

On other pages:

- [Winning technologies indexed by year](#)
- [Winning technologies indexed by technology](#)

**DISCLAIMER:** The short descriptions provided in this section were derived by EPA from the winning entries received for the Presidential Green Chemistry Challenge Awards and other public information. They are not officially endorsed by EPA, nor does EPA endorse any of the products mentioned in them. Claims made in these descriptions have not been verified by EPA. Each description represents only one aspect of the information in an entry and, as such, is intended merely to point users of this Web site to a summary of the winning entry.

Select an Industry Sector:

Industry Subtopics

**Agriculture and Agrochemicals, such as fertilizers, plant growth stimulators: 5 technologies**  
See also: [Food](#)  
See also: [Renewable Resources](#)

Year	Winner	Description of the Winning Technology in Relation to the Topic Area
2004	Jeneil Biosurfactant Company	Rhamnolipid biosurfactant: a biobased, biodegradable surfactant to increase penetration and dispersion of agricultural chemicals in soil and foliage; also an active biofungicide ( <a href="#">summary</a> )
2001	Bayer Corporation; Bayer AG (technology acquired by LANXESS)	Baypure™ CX iminodisuccinate: a biodegradable chelating agent that prevents, corrects, and minimizes mineral deficiencies in crops ( <a href="#">summary</a> )
2001	EDEN Bioscience Corporation	Messenger® proteins: nontoxic, naturally occurring harpin proteins produced by fermentation, stimulate plant growth and defenses against disease and pests ( <a href="#">summary</a> )

## Industry Subtopics

Agriculture and Agrochemicals  
Pesticides  
Automotive and Transportation  
Broad Applicability  
Buildings and Architecture  
Bulk and Commodity Chemicals  
Electronics and Semiconductors  
Food  
Formulation Ingredients  
Formulated Products  
Fuels  
Medical Devices  
Paints and Coatings  
Pharmaceuticals  
Pigments, Dyes, and Colorants  
Plastics  
Printing and Imaging  
Pulp and Paper  
Safety  
Soaps and Detergents  
Textiles and Fibers  
Water Treatment

Industry Subtopics



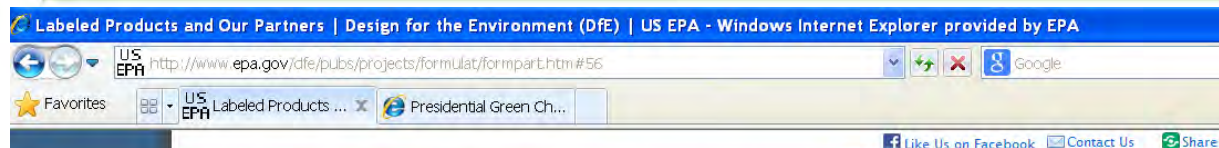


# EPA's Green Chemistry Assets

- Office of Chemical Safety and Pollution Prevention
  - Green Chemistry Awards
  - Design for the Environment
    - Alternatives Assessment
    - Safer Product Labeling Program: 500+ industry partners
  - Energy, Economy, Environment (E3)
  - Green Suppliers' Network – Suppliers' Partnership
- Other EPA Offices
  - Office of Research and Development (ORD)
    - Chemical Safety for Sustainability
    - SBIR
    - Challenge Prizes
  - Other Program Offices
    - Partnership Programs
- Regions



# Safer Product Labeling Program: searchable by product category



## Design for the Environment An EPA Partnership Program

You are here: EPA Home » DfE » Safer Product Labeling » Labeled Products and Our Partners

### Labeled Products and Our Partners

The following is a list of all partners and products recognized under the DfE Safer Product Labeling Program. DfE commends these companies for their leadership in designing products that are good for the environment and for their business.

A note on private labels and licensees: Partners may custom label a DfE-recognized product for another company, provided that the formulation remains identical to the recognized formulation. Similarly, DfE extends recognition to the products of Partner company licensees, provided that the Partner retains full legal control of the product formulation. Partners must inform DfE in advance of any private labeling or licensing activities that involve the use of DfE recognition.

\* These are private-labeled or licensee products.

† This partner has not participated in the auditing process. DfE is unable to verify that their products meet the DfE Standard for Safer Products.

Industrial/Institutional Product Categories: -- Select a Category --

[Advanced Search](#)

Consumer Product Categories: -- Select a Category --

[Advanced Search](#)

### Industrial/Institutional Product Category

#### Air Conditioner Coil Cleaners

Partner	City	State	Product	Partner Since
AC Energy Boost			*AC Energy Boost	
Atlantic Chemical & Equipment Co.	Atlanta	GA	ECO-KLEEN ECO-POWER	2008

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**Top DfE Questions**

- What does the DfE label mean?
- Where can I find a list of products with the DfE label?
- How do I apply to get the DfE label on my products?



Look for the label!

- Select a Category --
- Air Conditioner Coil Cleaners
  - Aircraft Cleaning Products
  - All-Purpose Cleaners
  - Athletic Field Paints
  - Automatic Dishwasher Detergents
  - Biological-Based Products : Bilge Maintainers
  - Biological-Based Products : Bioremediators
  - Biological-Based Products : Drain Maintainers
  - Biological-Based Products : Grease Trap/Lift Station Maintainers
  - Biological-Based Products : Septic System Treatments
  - Biological-Based Products : Wastewater Inoculants
  - Brick and Masonry Cleaners
  - Car Care Products
  - Carpet Cleaners
  - Degreasers
  - Deicers
  - Descalers
  - Dish Soaps
  - Fire-Fighting Products
  - Floor Care Products : Floor Cleaners
  - Floor Care Products : Floor Finishes
  - Floor Care Products : Floor Strippers
  - Graffiti Removers
  - Granite/Stone Cleaners
  - Hand Soaps
  - Kitchen/Countertop Cleaners
  - Laundry Products : Fabric Softeners
  - Laundry Products : Laundry Detergents
  - Laundry Products : Pre-Treaters
  - Select a Category --

[Advanced Search](#)



# Amplifying Outside the EPA sandbox

- Integrating Green Chemistry into Economic Development Mandates
  - Dept. of Commerce
    - Manufacturing Extension Partnership
    - Economic Development Administration
    - International Trade Administration
      - EETAC, Int'l Buyers' Program, Select USA, Goldkey Program
  - Dept. of Energy
    - Renewable Energy and Energy Efficiency: Biomass
  - USDA
    - Rural Development : loan programs
  - U.S. Export/Import Bank
    - Environmental Exports Program

# Interagency Network of Enterprise Assistance Providers (INEAP)

## Department of Energy

- Industrial Assessment Centers

## Department of Commerce

- International Trade Administration
- Economic Development Administration
- Manufacturing Extension Partnership
- Minority Business Development Agency

## Department of Veterans Affairs

- Center for Veterans Enterprise

## Small Business Administration

- Small Business Development Centers
- Women's Business Centers
- SBIR
- Entrepreneurial Development

## Environmental Protection Agency

- Green Supplier Network
- Pollution Prevention Program
- National Center for Environmental Innovation

## Export Import Bank of the United States

## Department of Defense

- Office of Technology Transition (MEP Liaison)

## Department of Agriculture

- Cooperative Extension, Education and Research


## Department of Labor

- Employment and Training Administration

## Housing & Urban Development

- Community Planning & Development





# Example of Opportunities for Amplification and Leverage: The Automotive Supply Chain

# Leveraging Industry Partnerships



*An Innovative Partnership between Auto Manufacturers, their Suppliers and the U.S. EPA*

## ➤ Vision

The Suppliers Partnership for the Environment (SP) is an association of automobile original equipment manufacturers (OEMs) and their suppliers working in collaboration with the US Environmental Protection Agency (EPA) and other governmental entities to identify and implement creative projects and programs that will advance environmental sustainability while providing economic value to the automotive supply chain through strategic action and engagement.

<http://www.supplierspartnership.org>





# Auto Supply Sector: part 1

- Coatings
  - UV-curable, one-component, low-VOC refinish primer [BASF]
    - for auto refinishing
  - Two-component waterborne polyurethane coatings [Bayer]
    - for hard plastic substrates, including interior auto surfaces





Thank you!!

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- [www.epa.gov/greenchemistry](http://www.epa.gov/greenchemistry)
- [www.epa.gov/DfE](http://www.epa.gov/DfE)
- [www.epa.gov/oppt/greenengineering](http://www.epa.gov/oppt/greenengineering)