



# Suppliers Partnership for the Environment (SP)

## Lean and Green Assessments

March 27, 2008



# Overview

- Why Link Lean & Clean (green)?
  - How does it work?
  - Success Stories
- Why Should You Participate?



# Cost Savings Identified

|                                |                        |
|--------------------------------|------------------------|
| <b>Total Potential Savings</b> | <b>\$35,126,750/yr</b> |
| Lean Opportunities             | \$23,682,524/yr        |
| Clean Opportunities            | \$10,945,033/yr        |
| Other Opportunities            | \$499,193/yr           |
| One-Time Lean Opportunities    | \$19,829,477           |

\*Results for 60 completed reviews



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# Clean Opportunities Identified

|                           |                 |
|---------------------------|-----------------|
| Energy Conservation       | 101,584,483 kWh |
| Water Conservation        | 35,320,965 gal  |
| Water Pollution Reduction | 19,477,288 lbs  |
| Air Emissions Reduction   | 156,346 lbs     |
| Solid Waste Reduction     | 3,471,901 lbs   |

\*Results for 60 completed reviews



# Combining Lean and Clean

*What's the **advantage** of combining **lean** with **clean**?*

## Traditional “Lean” Eliminates

- Defects
- Overproduction
- Waiting
- Non-utilized resources
- Transportation
- Inventory
- Motion
- Extra processing

## “Clean” Strives For

- Non-toxic substitutes
- Optimized raw material use
- Water use and wastewater reductions
- Air emission reductions
- Solid and hazardous waste reductions
- Transport packaging optimization
- Energy efficiency



# Symbiotic Relationship of Lean and Clean

- Less scrap, fewer defects, less spoilage = reduced environmental waste
- Fewer defects, less overproduction, simpler products, right-sized equipment = reduced use of raw materials
- Less storage, inventory space needed = reduced materials, land and energy consumed
- Less overproduction, lighting/heating/cooling unneeded space, oversized equipment = less energy use
- Less overprocessing, more efficient transport and movement = lower emissions



# So, how does this Lean and Green Approach Work?

- A supply chain focused program
- Targets small & mid-sized manufacturing suppliers
- *Lean and Clean* on-site reviews and training
- Expands lean definition of waste to include environmental considerations
- Measurable business and environmental impacts



# Program Roles

- U.S. Environmental Protection Agency
  - Provides funding and program support
- Department of Commerce's Manufacturing Extension Partnership (MEP)
  - Lean manufacturing experts &
  - Pollution Prevention experts
- Your OEMs
- You, as Suppliers



# Review Specifics

- Reviews first come, first served
- Reviews focus on single process
- Reviews Cost supplier \$6,500
- On-site reviews take 2-3 days
- Supplier receives a confidential final report with review recommendations
- Conduct independent follow-up survey to assess impacts one year after review



# Calculating Benefits

The **Green Suppliers Network Calculator** can help suppliers calculate the benefit of clean opportunities.

- The calculator is an **excel-based tool**.
- It helps suppliers prepare for reviews, **estimate projected savings, and track actual reductions**.
- No one from EPA, the MEP or a customer's organization has access to your calculations.

# Calculator Results Screenshot

Results

Green Suppliers Network -  
Calculator

1/3/2008

| Summary                      | Pre-GSN Implementation |                  |          | Projected Reduction |                  |          |          | Post GSN Implementation |                  |          |          |
|------------------------------|------------------------|------------------|----------|---------------------|------------------|----------|----------|-------------------------|------------------|----------|----------|
|                              | Amount                 | Units            | Interval | Amount              | Units            | Interval | % Change | Amount                  | Units            | Interval | % Change |
| Hazardous materials used     | 16,525                 | Pound(s)         | Year     | 11,950              | Pound(s)         | Year     | 28%      | 14,763                  | Pound(s)         | Year     | 11%      |
| Hazardous waste generated    | 7,113                  | Pound(s)         | Year     | 7,293               | Pound(s)         | Year     | -3%      | 6,696                   | Pound(s)         | Year     | 6%       |
| Non-hazardous materials used | 21,168                 | Pound(s)         | Year     | 21,288              | Pound(s)         | Year     | -1%      | 16,288                  | Pound(s)         | Year     | 23%      |
| Solid waste generated        | 2,600                  | Pound(s)         | Year     | 2,600               | Pound(s)         | Year     | 0%       | 1,800                   | Pound(s)         | Year     | 31%      |
| Water used                   | 200000                 | Gallon(s)        | Year     | 150,000             | Gallon(s)        | Year     | 25%      | 140,000                 | Gallon(s)        | Year     | 30%      |
| Waste water                  | 165000                 | Gallon(s)        | Year     | 127,500             | Gallon(s)        | Year     | 23%      | 120,000                 | Gallon(s)        | Year     | 27%      |
| Water pollution discharged   | 50                     | Pound(s)         | Year     | 0                   | Pound(s)         | Year     | 100%     | 0                       | Pound(s)         | Year     | 100%     |
| Energy use                   | 61,504                 | Kilowatt-Hour(s) | Year     | 56,170              | Kilowatt-Hour(s) | Year     | 9%       | 59,004                  | Kilowatt-Hour(s) | Year     | 4%       |
| Air emissions                | 250                    | Pound(s)         | Year     | 0                   | Pound(s)         | Year     | 100%     | 150                     | Pound(s)         | Year     | 40%      |
| Purchasing costs             | \$89,449.25            |                  | Year     | \$62,134.25         |                  | Year     | 31%      | \$71,687.50             |                  | Year     | 20%      |
| Disposal costs               | \$9,209.00             |                  | Year     | \$9,204.50          |                  | Year     | 0%       | \$8,304.00              |                  | Year     | 10%      |
| Other facility Costs         | \$500.00               |                  | Year     | \$0.00              |                  | Year     | 100%     | \$1,200.00              |                  | Year     | -140%    |

#### Display GSN results in selected Units

Year

<--- Click here to edit the way results are displayed

Pound(s)

Kilowatt-Hour(s)

Kilogallon(s)

Results are rounded to the nearest whole number.

#### GSN Results

| Inputs  | Projected Savings | Actual Amount | Units      | Interval |
|---|-------------------|---------------|------------|----------|
| Reduction in hazardous materials used                         | 4,575             | 1,763         | Pound(s)   | Year     |
| Reduction in non-hazardous materials used                     | -120              | 4,880         | Pound(s)   | Year     |
| Energy use reduced  | 5,334             | 2,500         | Kilowatt-H | Year     |
| Water usage reduced   | 50                | 60            | Kilogallon | Year     |
| Outputs   |                   |               |            |          |
| Reduction in hazardous waste generated                        | -180              | 418           | Pound(s)   | Year     |
| Reduction in solid waste generated                            | 0                 | 800           | Pound(s)   | Year     |
| Waste water discharged  | 38                | 45            | Kilogallon | Year     |
| Pollution   |                   |               |            |          |
| Reduction in water pollution discharged                       | 50                | 50            | Pound(s)   | Year     |
| Air emissions reduced   | 250               | 100           | Pound(s)   | Year     |
| Costs   |                   | Amount        | Interval   |          |
| Avoided purchasing costs                                      | \$27,315          | \$17,762      | Year       |          |
| Avoided disposal costs  | \$5               | \$905         | Year       |          |
| Other facility costs  | n/a               | -\$700        | Year       |          |
| Total cost savings (avoided disposal plus avoided purchasing) | \$27,320          | \$17,967      | Year       |          |



# Implementation Assistance

- **Michigan Manufacturing Technology Center**
- Michigan Manufacturing Technology Center (MMTC) Serving firms throughout Michigan, through six regional offices.
- **Phone:** 888-414-6682
- **Fax:** 734-451-4200
- **Email:** [inquiry@mmtc.org](mailto:inquiry@mmtc.org)
- **Web Site:** <http://www.mmtc.org/>



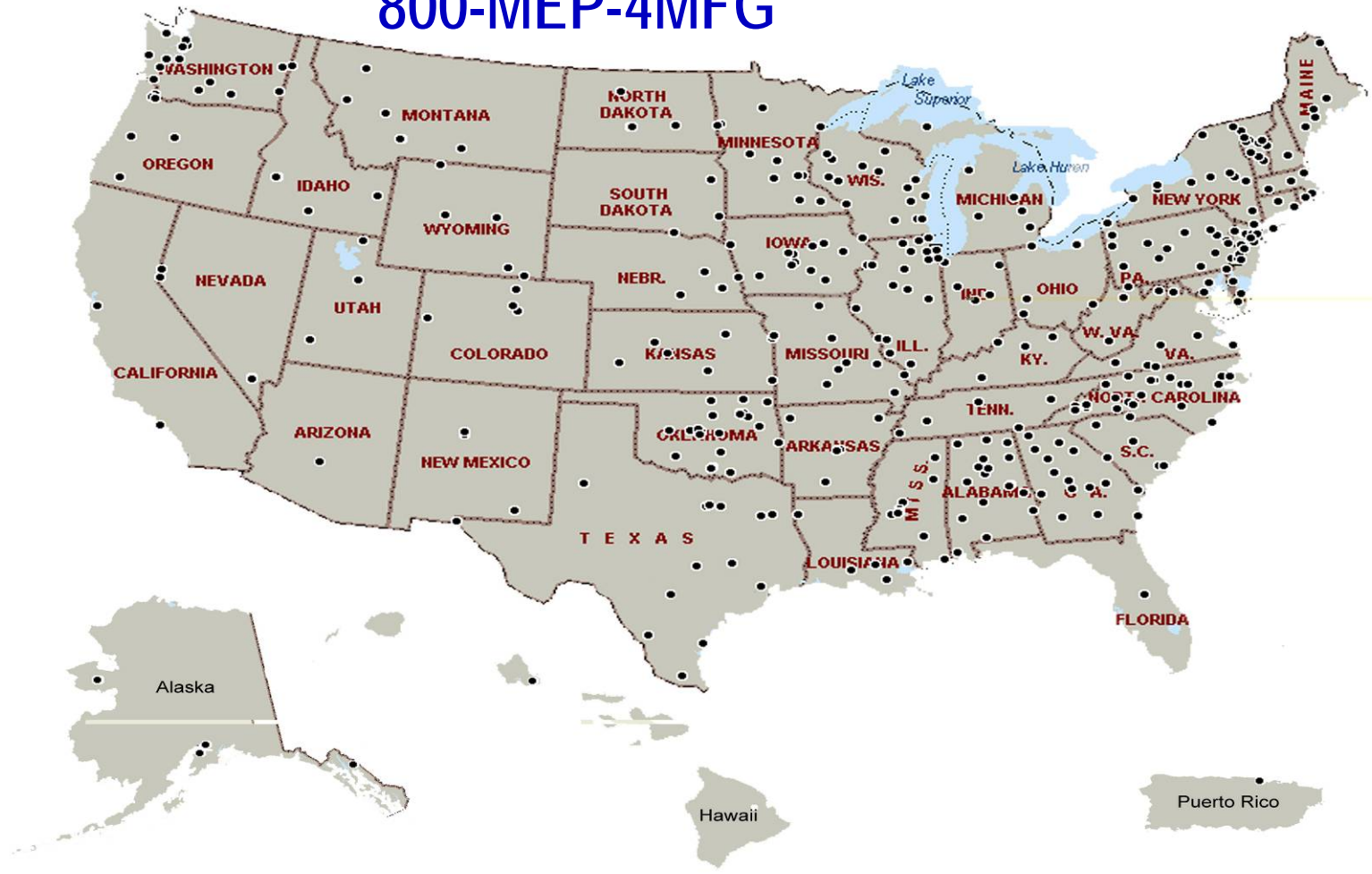
# MEP Office Locations

[www.mep.nist.gov](http://www.mep.nist.gov)

or

800-MEP-4MFG

59 "Centers"  
1600 Field Staff  
440 Service Locations





# Chemico Systems Inc.

## Pontiac, Michigan

Manufacturer of specialty chemical products for commercial/industrial applications

- The Company has cut its water consumption in half
  - 2,000,000 gallons of water saved since the assessment
- Greatly improved its energy efficiency
  - 50,000 CCF of natural gas saved
- Eliminated 27,000 lbs of toxic/hazardous inputs.
- Eliminated 41,000 lbs of solid waste.
- Total Dollar savings: \$63,000 for one process



# Metalworks

## Ludington, MI

Manufacturer of metal filing cabinets

- Reduced water use by 16 million gallons from new parts washing practices
  - Saving \$30,000 annually
- Reduced chemical use in parts washing by 20%
  - Saving \$20,000
- Saved \$50,000 in natural gas costs from redesigning curing oven orifices
- Saved \$50,000 in natural gas costs to improved controls on air make up



# Key Program Facts

- NO EPA personnel will come to your/suppliers door
  - Each GSN team is made up of MEP lean and state pollution prevention experts
- All information is confidential
  - EPA will not see facility specific data
- Decision to implement recommendations stays with supplier
- OEM gets aggregate data about it's suppliers performance



# Why you should participate

- Customized solutions to your manufacturing challenges
- Cost savings and increased market share
- Immediate results through hands-on training on the shop floor
- Improved relationships with your OEM
- Continuous improvement



# It's so compelling to be green....

## 2007 Survey of 25 Fortune 100 Companies:

“CEOs and the Boardrooms have discovered sustainability as a ‘top line’ opportunity to enhance brand promises.”

“The supply chain as a key source of value creation becomes the litmus test for the ‘promise’...and supply management is the enabler.”

“Being ‘green’ will no longer be an option, it will be a necessity for all participants in the supply chain.”

Source: A.T. Kearney and Institute for Supply Management (ISM) Sustainability Management Survey, January 2007



# Is This You?





# Suppliers Need Help

- Suppliers need help to meet your needs
- 2005 supplier survey conduct by *The Manufacturer*.
  - 63% of respondents report significant pressure from customers to reduce costs
  - Only 2% report that customers are providing resources and technical assistance

# *So, How Will You Move Your Environmental Footprint From This...*





*...To This*





# Please Consider this

- ✓ Be Our guest at the next SP Meeting
- ✓ Contact: Pat Beattie at General Motors

Andy Hobbs at Ford or

Ross Good at Chrysler or

Talk with me

- ✓ We will schedule a Lean and Green Assessment with you

# Add value to your efforts!

Suppliers Partnership - Windows Internet Explorer

http://supplierspartnership.org/

Suppliers Partnership


**SUPPLIERS PARTNERSHIP FOR THE ENVIRONMENT™**  
An Innovative Partnership between Auto Manufacturers, their Suppliers and the U.S. EPA


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PRESS RELEASES  
HOW TO JOIN?  
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EPA/NIST PARTNERSHIP  
ADDITIONAL RESOURCES  
MEMBERS ONLY

SUPPLIERS PARTNERSHIP FOR THE ENVIRONMENT (SP)  
1155 15TH STREET, NW  
SUITE 500  
WASHINGTON, DC 20005  
PHONE: (202) 530-0096  
FAX: (202) 530-0659  
INFO@SUPPLIERSPARTNERSHIP.ORG

**WELCOME TO THE SUPPLIERS PARTNERSHIP**

Suppliers Partnership for the Environment (SP) is an innovative partnership between automobile original equipment manufacturers and their suppliers and the Environmental Protection Agency (EPA). SP addresses the goals of the membership by creating new and innovative business-centered approaches to environmental protection that improve the environment while providing value throughout the automobile supply chain. SP provides a forum for small, mid-sized and large automotive and vehicle suppliers to work together, learn from each other and share environmental best practices.

  
*Steve Johnson, EPA and SP Executive Committee*

  
*(In photo from left to right): Bo Anderson, GM; Steve Johnson, EPA; George Kessinger, Goodwill; Susanne Fredericks, Goodwill; Beth Lowery, GM with SP Recognition Award*

**Suppliers Partnership for the Environment Recognizes Goodwill Industries for Creating SP By-product Reduction Facilities**  
During an event sponsored by General Motors at the 2007 North American International Auto Show, Beth Lowery, Vice President, Environment and Energy, GM, on behalf of the Suppliers Partnership for the Environment (SP), recognized Goodwill Industries International for their innovative activities and commitment to creating pilot SP By-product Reduction Facilities in Michigan and Ohio. U.S. Environmental Protection Agency (EPA) Administrator Stephen Johnson joined Ms. Lowery for the presentation to Goodwill Industries International. George Kessinger, President and CEO of Goodwill International, accepted the recognition award from SP saying, "On behalf of Goodwill International and the local Goodwill facilities that are making the concept of SP By-Product Reduction Facilities a reality, I thank SP for this recognition. Goodwill Industries has been very fortunate to be a member of the Suppliers Partnership. Goodwill is an important link between the automotive industry, environmental practices, and job opportunities. This partnership is a solid example of how Goodwill can be a resource for businesses in a local community and help promote job growth, economic growth, and environmental sustainability." **For more information about this event, please visit the [Press Release page](#).**

**Suppliers Partnership for the Environment in 2006 Recognizes U.S. EPA for 35 Years of Service to Our Nation's Environment**

www.supplierspartnership.org

start Suppliers Partnership ... 12:30 PM



# Contacts

Tom Murray, US EPA  
Murray.tom-hq@epa.gov  
202-564-8829

[www.supplierspartnership.org](http://www.supplierspartnership.org)

Pat Beattie – 248-753-4860  
[pat.beattie@gm.com](mailto:pat.beattie@gm.com)

[www.greensuppliers.gov](http://www.greensuppliers.gov)

Andy Hobbs – 313-845-5802  
[ahobbs@ford.com](mailto:ahobbs@ford.com)

Ross Good-248-576-7344  
[rgg3@daimlerchrysler.com](mailto:rgg3@daimlerchrysler.com)