Green Suppliers Network

Partner Presentation

GREEN SUPPLIERS NETWORK

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Why Green Suppliers Network?

The Green Suppliers Network has helped suppliers identify over **$45 million dollars** in annual cost savings and **$24 million** in one-time cost savings.

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Current Trends

A recent survey of Fortune 100 companies states that:

- Being Green will no longer be an option, it will be a necessity for all participants in the supply chain
- **75%** of companies surveyed stated that they will reward suppliers with sound sustainability practices
- **32%** of companies surveyed stated that they would **de-select suppliers** for failing to meet sustainability criteria today and **76%** of companies stated that they would deselect suppliers in the future for the same reason!

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

Overview

- What is Green Suppliers Network?
- Why Link Lean & Clean?
- How Does It Work For You?
- Success Stories
- How to Join

What is the Green Suppliers Network?

- Lean & Clean on-site reviews
- Focused on small & mid-sized manufacturing suppliers
- Expands lean definition of waste to include environmental considerations
- Measurable business and environmental impacts

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What Green Suppliers Network Reviews Offer

- Practical Sustainability
- Customized solutions to manufacturing challenges
- Cost savings, increased capacity
- Immediate results through hands-on training on the shop floor
- Continuous improvement

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Program Roles

- U.S. Environmental Protection Agency
- National Institute of Standards and Technology's Manufacturing Extension Partnership (NIST MEP)
- State Environmental Experts
- Original Equipment Manufacturers
- Suppliers

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Cost Savings Identified

Cost Savings from Environmental Impact Opportunities	**$18,237,174/yr**
Energy Conservation (MM Btu)	852,254,303
Water Conservation (gallons)	41,450,804
Water Pollution Reduction (lbs)	19,839,848
Air Emissions Reduction (lbs)	1,375,673
Solid Waste Reduction (lbs)	4,815,844
Cost Savings from Lean Opportunities	**$29,980,617/yr**
Cost Savings from Other Opportunities	**$898,940/yr**
Total Potential Cost Savings	**$49,116,731/yr**

Results for 94 reviews

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Lean & Clean Overview

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Why Connect Lean & Clean?

We must stop thinking of Lean and Clean as separate initiatives. This is not about inserting clean where it fits with lean approaches. They are **symbiotic**, each leveraging off the other in achieving beneficial, profitable impacts for a company. Integrating the two as one process is the only solution to a lean and clean future.

– Rick Fleming, The Right Place, Inc.

What is Lean and Clean?

Lean is:

a systematic approach to identifying and ***eliminating waste*** (non-value added activities) through continuous improvement by flowing the product at the pull of the customer in pursuit of perfection. **- The MEP Lean Network**

Clean is:

a systematic approach to ***eliminating waste*** by optimizing use and selection of resources and technologies while lessening the impact on the environment

Waste is:

anything other than the minimum amount of equipment, **materials**, parts, space, and worker's time which are absolutely necessary to add value to the product.

- Shoichiro Toyoda, President, Toyota

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Relationships Between Lean and Clean

- Optimize Material Use → Less Scrap = **Reduced Solid Waste**
- Reduce Inventory → Less Chemical Spoilage = **Reduced Hazardous Waste**
- Reduce Overproduction → Less Runtime = **Energy Savings**
- Reduce Transportation → Less Fuel Consumption = **Reduce Air Emissions**

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Environmental “Blind Spots”

- **Hidden environmental waste** buried in overhead & facility support costs
- **Environmental and human health risks** not considered in lean initiatives
- **Environmental impacts throughout the product lifecycle** affecting customers & stakeholders

Benefits of the *Lean and Clean Advantage*

Implementing **lean** and **clean** opportunities simultaneously can…

- ✓Reduce overhead and manufacturing costs
- ✓Improve efficiency and optimize raw material use
- ✓Eliminate waste through reducing rework and defects
- ✓Reduce environmental footprint and supply chain vulnerability
- ✓Improve worker safety and reduce regulatory risk
- ✓Meet customer expectations while positioning yourself in the green global marketplace

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Seeing More Results

- Adding Clean Opportunities to a Lean Event can add more than 30% more cost savings.

- Green Supplier Network's Cumulative Results
  - Lean savings $29,980,617/yr
  - Clean savings $18,237,174/yr
  - Other savings $898,940/yr
  - **Total savings $49,116,731/yr**

Results through February 2009

How this works for you

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Partner Membership Process

1. Partner registers for a review on program website
2. MEP center contacts Partner to schedule a review
3. MEP and Partner enter into a contract
4. Partner selects a cross-functional team to participate in review
   - A cross functional team can include personnel from environmental health and safety, purchasing, operations, engineering, maintenance, and management
5. Lean and Clean experts conduct half-day walk through
   - Partner identifies the process/product line to be reviewed
   - Partner and experts identify lean and environmental baseline data

Baseline Metrics

Lean Metrics	Clean Metrics
Annual revenue	Hazardous materials used
Cost per unit product	Non-hazardous/Solid Waste generated
Labor overhead	Energy use
Materials overhead	Water use
Operating margin	Wastewater discharged
Amount of Inventory	Water pollution discharged
Inventory turnover time	Material purchasing costs
Percent on-time deliveries	Disposal costs
Percent rework	Recycled materials
Annual revenue	
Actual machine run time and available machine run time	
Percent available machine run time	
Number of employees	
Average employee turnover	
Amount annual revenue per employee	
Average employee pay	

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Partner Membership Process

6. Lean and Clean experts conduct custom training on value stream mapping (VSM) and process mapping (1 day)

   - A VSM is a traditional Lean exercise used to understand the sequence of activities that take place in order to produce a product.

7. Lean and Clean experts map “current state” and “future state” of process (1-2 days)

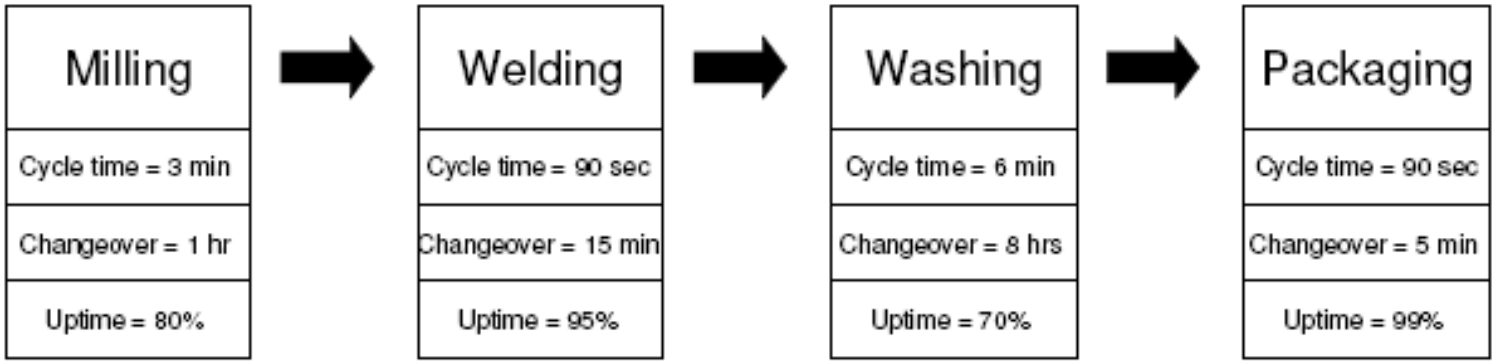
   - These value stream maps highlight value added and non-value added activities

   - “Current state” maps allow suppliers to see waste sources and “future state” maps help suppliers understand how to realize environmental and economic benefits

Lean Value Stream Maps

Traditional Lean Value Stream Mapping Looks at:

- Cycle time
- Changeover
- Uptime or Runtime

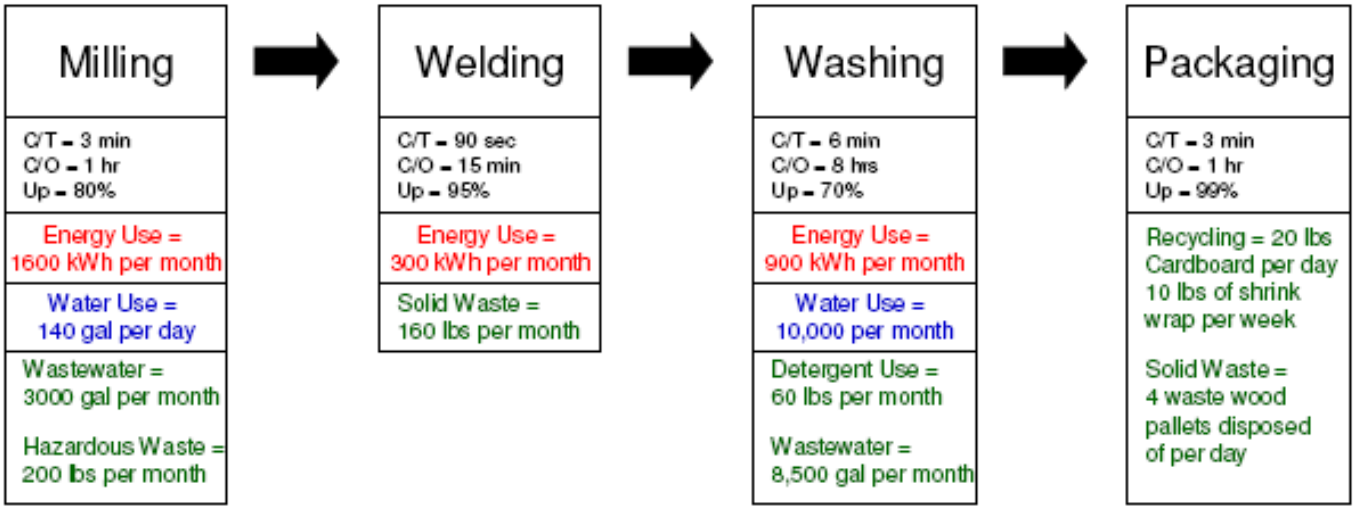


Lean and Clean Value Stream Mapping

Adding in environmental metrics…

- materials use
- wastes
- water
- energy

…could look like this:



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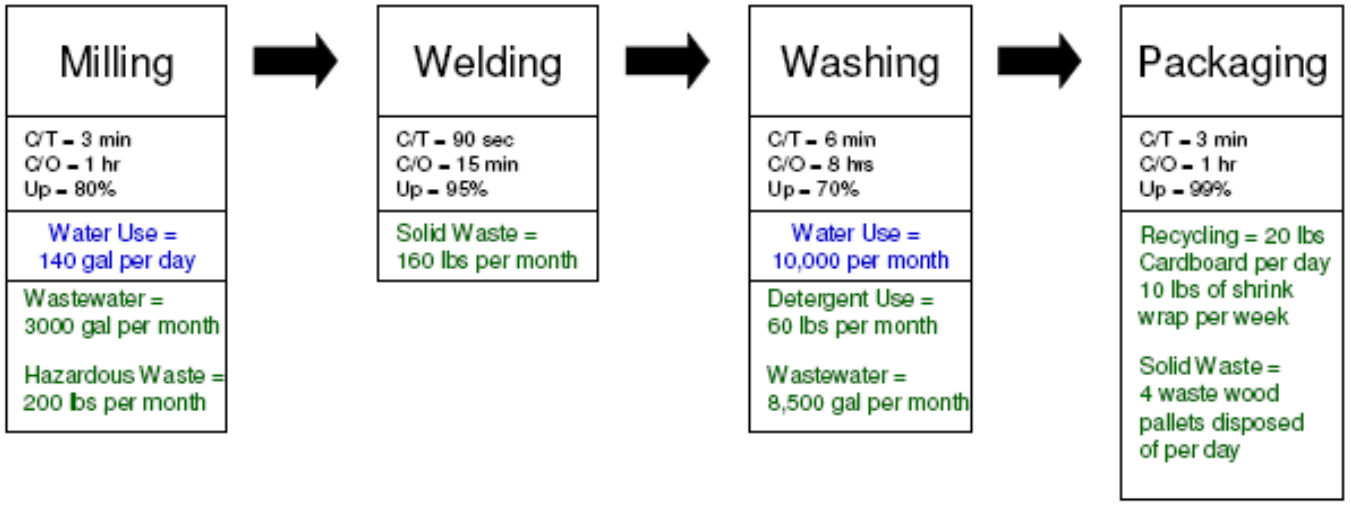
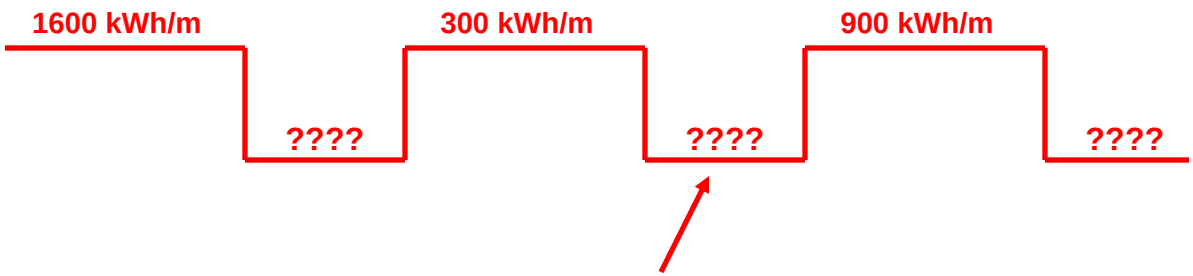
Lean and Clean Value Stream Mapping

Or it could look like this:





Fill in the blanks during your Future State Mapping exercise by asking ***"what could it be?"***

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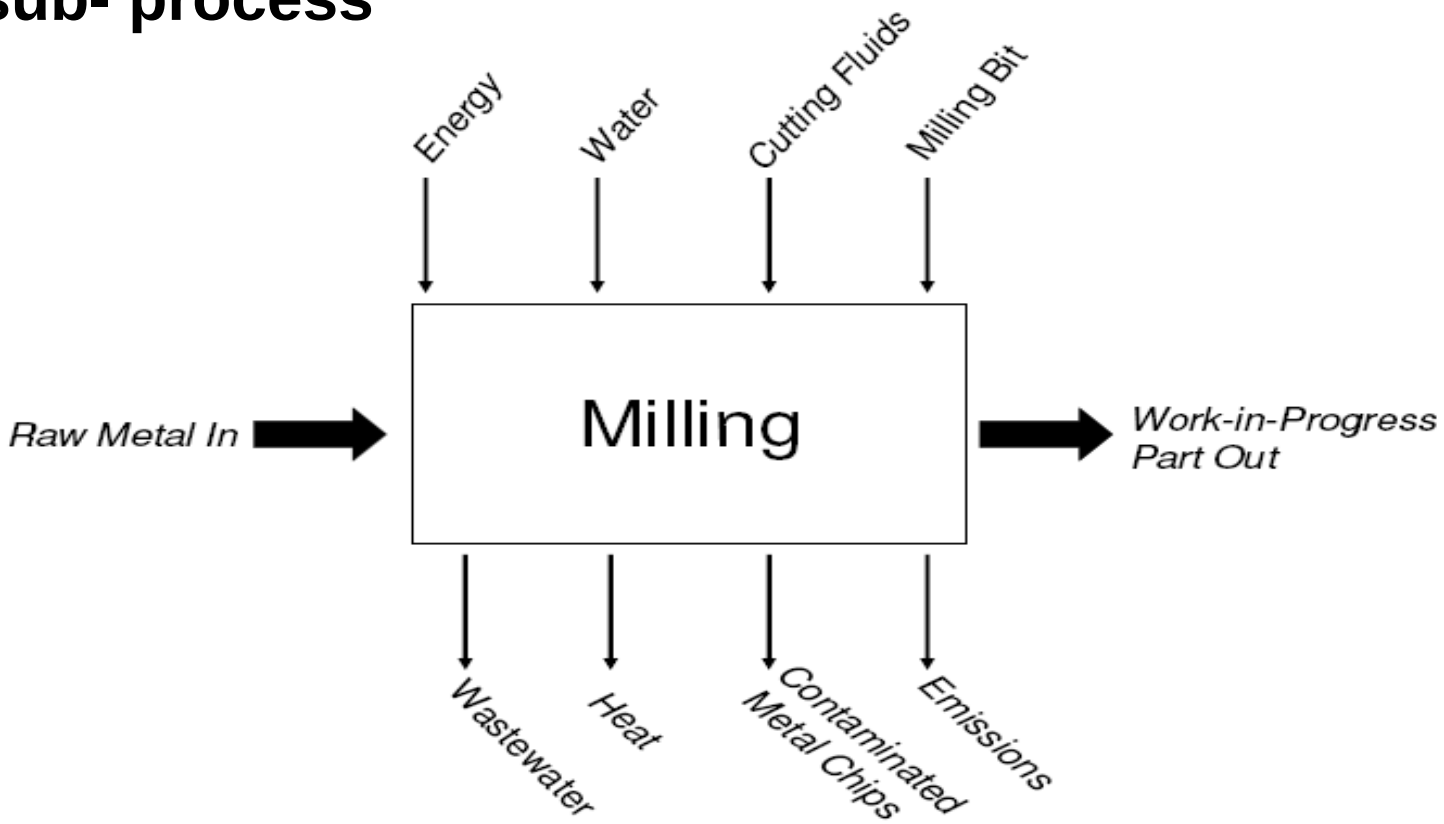
Process Maps

- **Process Maps identify inputs and outputs for each sub- process**



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Partner Membership Process

8. Lean and Clean experts present recommendations to the Partner

   -The Review will identify both low hanging fruit and opportunities to make larger-scale innovations to the process

9. Partner implements review recommendations and tracks progress

   - The Lean and Clean expert can help identify local resources to support implementation such as grant funding, recognition programs, and low cost loans.

   - For example:

   - NY state has a $10,000 grant program for implementing pollution prevention (P2) practices
   - GA has a recognition program called GA Partnership for a Sustainable Georgia
   - MI has a Michigan Retired Engineer Technical Assistance Program (RETAP) to assist with implementing P2 activities

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Partner Membership Process

10. Partner reports implemented results to confidential MEP follow-up survey six months after review

    - Partners may obtain a $1,000 training credit to support implementation as funding remains available. All follow-up work must be coordinated through MEP within 3 months of review.

    - Partners can use the Green Suppliers Network Calculator to track progress and respond to their customer's growing demand to measure and report environmental impacts.

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	

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Review Specifics

- Reviews first come, first served
- Reviews focus on single process
- On-site reviews take 2-3 days
- Cost

$7,500 Cost of review
_ $1,000 U.S. EPA buy-down*
$6,500 Total cost to supplier

*Suppliers Must be a Manufacturer and have 500 employees or less per facility. All buy-downs are subject to availability of funds.

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Success Stories

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Success Story

Metalworks, Inc.

- Metal filing cabinet manufacturer
- 300 employees
- Review of two drawer lateral file cabinet line

Implemented Results

- $175,000 annual energy savings
- $30,000 annual water savings with 16 million gallons conserved
- $20,000 annual savings in raw chemicals costs

- **Total Savings: <u>$225,000</u>** annually

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Success Story

Summit Corporation of America

- Metal finishing company
- 121 employees, $18M in annual sales
- Nickel barrel plating line -- 3% of business

Green Suppliers Network Review Results

- $980,000 in potential annual savings
- $95,000 in potential energy savings

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Supplier and Customer Perspectives

"The *Lean and Clean* principles have become our way of doing business…I would encourage anyone…to become involved in the Green Suppliers Network…"

– Steve Beurkens, H & L Advantage, Steelcase supplier and Green Suppliers Network Partner

"We see [Green Suppliers Network] as a 'win-win' for Steelcase and our suppliers If waste – and therefore unnecessary cost – can be removed from our suppliers' processes, that translates into a stronger supply chain, which is good for both of us."

– Mary Ellen Mika, Steelcase, Inc., and Green Suppliers Network Corporate Champion

How to Join?

Register for a review at: **www.greensuppliers.gov**

Questions? Contact:

Kristin Pierre, US EPA
pierre.kristin@epa.gov
202-564-8837

Kari Reidy, NIST
kari.reidy@nist.gov
301-975-4149

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