DEHNR

Pollution Prevention Challenge Grants

FACT SHEET

The Office of Waste Reduction (OWR) of the North Carolina Department of Environment, Health and Natural Resources (DEHNR) challenges North Carolina businesses and industries to identify and apply pollution prevention technologies. To help accomplish this challenge, financial assistance in the form of matching grants up to $20,000 is available to industries, businesses, and trade associations. OWR has administered 102 Challenge Grants since 1985; these add up to over $1,005,000 in awards and over $3,500,000 in company investments for projects during the 9-year period.

Purposes of the Challenge Grants

The Challenge Grant program is designed to help North Carolina businesses and industries develop and implement *innovative* projects that eliminate, reduce, or recycle waste in any media including air emissions, wastewater discharges, and solid and hazardous waste.

Grants Assist Company's Pollution Prevention Efforts

The Challenge Grants offer several benefits to businesses and industries. Many pollution prevention projects must compete for company capital along with other investment projects, and a challenge grant of up to $20,000 may be just enough to help an innovative project meet an acceptable return on the investment. For other facilities, the grant may be a sizable portion of project cost; without the grant, the facility clearly could not consider project funding. A Challenge Grant may also help sell a pollution prevention initiative to upper management or other investors. With payback periods of one to two years for a majority of recent projects, the grants promote the DEHNR's goal of a healthy environment and sound economy. Challenge Grants are a public/private partnership that can offer positive exposure and demonstrate a company's leadership role in environmental management.

Eligibility Requirements

Projects that address waste reduction through source reduction or recycling are eligible for Challenge Grants. Projects that are NOT eligible include those that address pretreatment, treatment, or disposal; product development as part of entrepreneurial endeavors or new business developments; and development of any proprietary systems or products. Proposed projects will be accepted for review from industries and businesses located in North Carolina. Trade associations are also eligible to apply as long as they represent a specific group of North Carolina industries.

Proposed projects must address the feasibility of applying specific methods or technologies to prevent pollution and/or to reduce waste generation. Projects can range from in-depth studies and pilot-plant demonstrations to full-scale implementations. Examples of previously funded projects are listed in the tables beginning on page 2.

Funding and Schedule

Approved projects will receive grants up to $20,000. Grant money must be matched on a dollar-per-dollar basis. Grant funds can be matched through in-kind contributions such as staff salary, equipment, laboratory analysis, or consultant fees.

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The Challenge Grants are awarded annually. Typically, a request for proposals is mailed out in early Spring of each year. Proposals generally are due in May, and grants are awarded in September. Payments of the award are made available only after receipts are submitted, and 10 percent of the total grant payment will be withheld until the final project report is submitted. Funded projects must typically be completed within eight months after being awarded in September.

Requirements of Grant Recipients

A provision of the Challenge Grant contract requires that a recipient submit an interim and final report on the project. OWR will, upon request, make these reports available to other industries pursuing similar projects. In some instances, OWR will develop follow-up case studies on the projects or waste reduction guidance for general publication. The results of the Challenge Grant projects are used for technology transfer to encourage similar companies to adopt pollution prevention practices and technologies.

Hints To Get a Project Funded

Challenge Grants are awarded through a competitive process. Over the past three grant rounds, OWR has funded an average of 21 percent of project applications submitted. To ensure favorable consideration, applicants should read the proposal instructions carefully and make sure the application is complete with grant proposal and project summary form. Preference will be given to innovative projects and those with source reduction measures. Small businesses will receive special consideration in the selection process. Other selection criteria include degree of company commitment to sustaining the project, transferability of project to others, waste reduction and cost savings potential, project feasibility, and quantitatively measurable results. The applicant's recent environmental compliance history will also be reviewed.

If you receive the *FOCUS: Waste Minimization* newsletter, you will automatically receive a Challenge Grant request for proposal (RFP). If you do not receive an RFP in the Spring, write the NC Office of Waste Reduction at Post Office Box 29569, Raleigh NC, 27626-9569 or telephone (919) 715-6500. Below are the Challenge Grants awarded for 1995-1996. Subsequent tables summarize grant projects from 1992 through 1995.

1995-1996 Pollution Prevention Challenge Grant Awards

Company	County	Purpose	Grant Amount
ABB Power T&D Co.	Guilford	Demonstrate powder coatings on non-conductive fiberglass tubes as an alternative to solvent-based spray coating.	$15,000
Athol Corpo-ration	Granville	Demonstrate a process to cryogenically separate PVC coating from fabric and to reuse the recovered PVC in the process.	$15,000
Burlington Chemical Co.	Alamance	Demonstrate the use of a stress gene assay to develop less toxic products for the textile industry. The technique will enable the company to determine specific raw materials that contribute to aquatic toxicity so that they can find substitutes or minimize their use.	$15,000
Hankison International	Carteret	Demonstrate a system to recycle wastewater from its metal cleaning and pretreatment operation and to switch to a powder coating system from the current solvent-based painting operation.	$15,000
Maple Springs Laundry	Catawba	Demonstrate the use of hydrogen peroxide in place of hypochlorite in a commercial laundry operation	$20,000
Solectron Technology, Inc.	Mecklenburg	Demonstrate a no-clean, VOC-free process for its printed circuit board manufacturing operation.	$10,000

Company	County	Purpose	Grant Amount
1994-1995 Pollution Pevention Challenge Grant Awards			
ChemEnco, Inc	Mecklenburg	Demonstrate production of sulfuric acid using spent wastewater from the textile dye industry as a feedstock. This wastewater contains large quantities of dilute sulfuric acid which potentially can be reclaimed and marketed.	$15,000
McKay's Dry Cleaners	Wake	Demonstrate multi-process garment cleaning, a combination of wet and dry cleaning. Project will assess applicability of process to various fabrics.	$15,000
Nomaco, Inc.	Wake	Construct a facility to grind, melt, redensify, and repelletize plastic foam scrap generated from production operations. The recovered plastic will be returned to the manufacturing process or sold to other users; the reuse would reduce solid waste by 80 percent.	$15,000
Sara Lee Knit Products	Forsyth	Demonstrate reuse of spent brine solutions from dyeing process. Reuse of spent dyebaths will help eliminate need for costly color and salt removal equipment.	$9,422
Sno White Cleaners	Guilford	Install condensation system to recover petroleum solvents currently vented to the atmosphere. As the recovered solvents would be distilled and reused, virgin solvent purchases will be reduced.	$10,000
Spectrum Recycling Corp	Mecklenburg	Expand a pelletizing line for recycling nylon and polyester scrap from the textile industry. Project will convert 8 million pounds of scrap fiber into usable product.	$15,000

1993-1994 Pollution Prevention Challenge Grant Awards

Company	Project	Grant Amount	Company Investment	Results	Annual Savings
C & R Electroless Nickel Services	Implement closed loop electroless nickel plating line; record before/after savings and reduction in pollutant releases.	$10,000	$17,748	Elimination of nickel-bearing wastewater to POTW; reductions of over 90% in water consumption and 99.8% in nickel compound air emissions and recovered chemicals.	$10,718
Craftsman Fabrics Industries	Reduce water and dye chemical consumption through improved dye bath processing control.	$15,000	$22,112	Reduced 14.1 million gallons of water and 898,000 pounds of chemicals per year	$172,755
Hatteras Yachts, High Point	Evaluate HVLP spray guns for polyester gel and direct application roller equipment of polyester resin in large boat manufacturing.	$15,000	$20,295	Potential reductions in styrene emissions by reducing vaporization during spraying of polyester resin and gel coats.	TBD
Hatteras Yachts, New Bern	Evaluate new multi-component HVLP spray equipment for applying linear polyurethane exterior paint for fiberglass yachts.	$15,000	$19,346	Potential reduction in left-over catalyzed paint and clean-up waste solvents; reduced VOCs from increased application efficiency of high-solid coatings.	TBD
Trinity America Corp.	Implement pilot machine in production of flexible polyurethane foam without use of auxiliary blowing agents.	$15,000	$15,000	Potential reduced use of auxiliary blowing agents and substantial reduction in emissions.	TBD

Company	Project	Grant Amount	Company Investment	Results	Annual Savings
1992-1993 Pollution Prevention Challenge Grant Awards					
Black & Decker	Replace three parts washers utilizing 111-trichloroethane (TCE) with two aqueous washers and a plasma welding operation	$15,000	$447,000	1,247 gals/yr 111-TCE reduced as plasma welders eliminated need for one degreaser; replaced two other degreasers with aqueous spray cleaning system.	$118,350
C & R Hard-chrome	Installation of PVC ventilation system on two chrome plating operations to facilitate recovery/reuse of chrome and water emissions.	$15,000	$35,575	Non-contaminated chrome and wash water reused in plating operations reduced 1,440 gals/yr hazardous waste and 96% of emissions.	$6,000
Diversified Technologies	Develop plating methods to recover copper before chemical wastewater treatment to reduce F006 waste.	$5,200	$11,000	Determined plating efficiencies for varying anodes and initial bath type; plating out copper reduced 80% of F006 waste.	$5,958
Fabco Fastening Systems	Purchase and install coolant recycling and oil recycling systems and install process to reduce water-based paint cleaning waste.	$15,000	$20,000	Mobil oil reprocessing unit reduced oil waste 3,150 gals/yr; reduced 4,400 gals/yr coolant use with recovery units; evaporation unit reduced paint equipment cleaning waste by 11,000 gals/yr.	$21,580
Henredon Furniture Ind.	Spray booth retrofit with usable metal filters, hybrid waterborne coating conversions for high-end wood furniture.	$12,900	$15,080	Metal filters proved to be economical and efficient: 8-week payback; 72% projected combined toxics reduction for waterborne system.	$4,907 (filters only)
JPS Elasto-merics	Conduct 6 pilot-scale programs to investigate reuse and recycle of waste cardboard and polymer sheets.	$15,000	$60,000	Baler facilitates cardboard recycling of 85 tons/yr; polymer sheets pressed into walkway pads or reused reduced 222 tons/yr polymer waste.	$55,575
Kemet Electronics Corp.	Develop process to reclaim a latex/ceramic film for reuse in capacitor manufacturing	$15,000	$80,285	90,000 lbs/yr ceramic raw material to be reclaimed, not landfilled as hazardous waste, plus labor time, material, and energy savings.	$814,000
Mannington Ceramic Tile	Reduce water consumption by 85% to 90% with low-cost wastewater reuse project.	$1,950	$1,950	Reviewed wastewater reclaim alternatives to remove solids < 20μ. No system found that met economic/ processing requirements.	N/A**
Morganite, Inc.	Segregate carbon dust contaminated with copper and lead to be reclaimed by a smelter.	$5,000	$17,460	Ship to a smelter carbon dust with >10% copper constituency, thus reducing D008 by 228,900 lbs/yr.	$69,000
Parker Hanifin	Replace methylene chloride in vapor degreasing system with biodegradable cleaner and basket wash system to eliminate F001.	$15,000	$45,000	Custom-designed wash system eliminated generation of 2,000 lbs/yr F001 waste and ≈25,000 lbs/yr VOCs.	$104,700

Company	Project	Grant Amount	Company Investment	Results	Annual Savings
R.J. Reynolds	Propose to reduce 60% of solvent-based ink coatings with water-based coatings.	$15,000	$735,000	Reduced hazardous waste by 540,000 lbs/yr and VOCs by 310,000 lbs/yr by converting 95% of overlacquer on labels of crush-proof boxes and cartons and 95% of clear slip coats and innerliners to water-based coatings.	$162,489
T.S. Designs, Inc.	Design/install recovery system for water and chemicals used in cleaning ink printing screens.	$2,573	$2,573	530 gal/month water reduction; substantial reduction in chemical use.	$2,706
Thomson Crown Wood	Replace air-assisted spray guns with HVLP spray equipment.	$10,000	$10,000	Reduced material purchases by 13,500 gals/yr (65% equalizer; 65% stain; 65% toner; 35% glaze; 35% no-wipe; 53% finishes).	$137,500
Tillet Chemical Inc.	Substitute methyl chloroform with isopropyl alcohol in manufacture of carboxymethyl starch.	$14,000	$36,300	60% (27,000 lbs) reduction in methyl chloroform use; employee training, product testing, and evaluation conducted.	$24,000
Watauga Ready-Mix Concrete, Inc.	Purchase system to clean and separate coarse and fine aggregate from waste concrete.	$15,000	$30,000	Recover 5.1 million lbs/yr aggregate equal in quality to virgin material and reuse 650,000 gals/yr wash water to make a stronger product.	$30,650
Yale Materials	Replace ultrafiltration unit with centrifuge system that will allow reuse of machine coolant.	$15,000	$45,000	Through coolant recovery, 23,340 lbs/yr waste eliminated; material purchases reduced by 50%.	$41,472

*TBD = To Be Determined. **N/A = Not Available.

The Office of Waste Reduction provides free, non-regulatory technical assistance and education on methods to eliminate, reduce, or recycle wastes before they become pollutants or require disposal.

Contact OWR at Post Office Box 29569, Raleigh, NC 27626-9529 or telephone (919) 715-6500 for information about our services or assistance with your waste reduction program.

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