3R Portfolio
- Good Practices to Promote the 3Rs -

Country: United States of America

Major Activities

The US Government views the 3Rs as a major component of its broad strategy to ensure sustainable and economically viable management of our environment and natural resources. The 3Rs reflect life cycle concepts by encouraging prudent design, purchase and use of products, environmentally sound recycling and remanufacturing, as well as ultimate disposition. The U.S. Government sponsors initiatives outlined below. State and local government, industry and non-governmental organizations have also initiated a wide variety of additional 3R activities.

1. **Resource Conservation Challenge (RCC)**

Combines the strengths of many U.S. EPA programs and partners by preventing pollution and promoting recycling and reuse of materials; reducing the use of toxic chemicals and conserving energy and materials. The RCC is organized around ambitious challenges and voluntary partnerships that seek to find flexible, innovative ways to conserve our nation's resources and use materials effectively. The RCC works to build a sustainable program, a cradle-to-cradle system for materials management that looks at the entire life cycle of materials and products. The four key near-term focus areas are: 1) achieving the national 35% recycling rate for municipal solid waste; 2) beneficial reuse of secondary materials; 3) reduction of priority and toxic chemicals; 4) and promoting environmentally-smart initiatives, with initial focus on electronics. Areas of focus are identified at the following website. (www.epa.gov/rcc)

2. **Promoting Environmentally Smart Design**

Design for the Environment (DfE) utilizes a variety of approaches in collaboration with industry and other stakeholders to better understand the relative risks, performance and costs of chemicals and their substitutes in order to move to cleaner technologies and safer chemical alternatives, all of which protects workers, consumers and the environment. (www.epa.gov/dfe).

- Formulator Partnership Program seeks to identify safer substitutes for pollutants of concern and encourage partners, through recognition, to reformulate products to be environmentally safer and to conserve water and energy.
- Furniture Flame Retardancy Partnership seeks to evaluate environmentally preferable options for furniture fire safety and alternatives for pentabromodiphenyl ether (pentaBDE).
- The Lead-Free Solder Partnership is conducting a study of life-cycle environmental impacts of tin/lead (SnPb) and several lead-free solder alternatives.
- Green Chemistry promotes innovative chemical technologies that reduce or eliminate the use or generation of hazardous substances in the design, manufacture, and use of chemical products. Recognition can be achieved through the Presidential Green Chemistry Awards Program. (www.epa.gov/greenchemistry/index.html)
- Green Building Workshop strives to build effective EPA leadership in the green

building movement by jointly informing, coordinating, and guiding the development of Agency policies, programs, partnerships, communications and operations that influence building and development. (www.epa.gov/greenbuilding)

- Green Suppliers Network is a collaborative venture between industry, EPA, and the U.S. Department of Commerce's Manufacturing Extension Partnership (MEP), a leading provider of technical assistance to manufacturers. The Suppliers Network works with large manufacturers to engage their small and medium-sized suppliers in low-cost technical reviews that focus on process improvements and waste minimization. (www.epa.gov/gsn)
- Technical Assistance and Tools
    - The P2 Framework is an approach to risk screening that incorporates pollution prevention principles in the design and development of chemicals. The objective of this approach is to inform decision-making at early stages of development and promote the selection and application of safer chemicals and processes. (www.epa.gov/oppt/p2framework)
    - Risk Screening Environmental Indicators (RSEI) is a screening tool that compares toxic chemicals released to the environment from industrial sources. (www.epa.gov/oppt/rsei)
- GreenScapes is designed to help provide cost-efficient and environmentally smart solutions for large-scale landscaping. The goal is to preserve natural resources and prevent waste and pollution by encouraging organizations to make more holistic decisions regarding resource conservation in their practices and purchases. GreenScapes also provides national recognition for outstanding achievements in resource conservation and pollution prevention. (www.epa.gov/greenscapes)

3. Achieving the National 35% Recycling Rate of Municipal Solid Waste

- U.S. EPA is developing a framework for increasing the rate of municipal solid waste recycling to 35%. Targeted waste streams include paper, organics, and packaging/containers.

4. Promoting Efforts to Reduce the Environmental Impact of Products

- EPA is working with participants in the product value chain —including feedstock suppliers, manufacturers, retailers, users, recyclers and disposers—to share responsibility for reducing the environmental impacts of products and to increase reuse and recovery of products at the end of their useful life. At this time, EPA is engaged in projects targeting electronics, containers/packaging, carpets, paints, tires, and mercury-containing products. (www.epa.gov/epr). Each project is different, but in general they seek to develop partnerships to promote environmentally-smart design of these products, to prolong their life and promote reuse and recycling. They also seek to develop innovative partnerships to increase the collection of these products at end of life and to promote safe and appropriate reuse and recycling. Details on some of these projects follow:

Electronics

- Plug-In to eCycling: promotes voluntary partnerships between manufacturers, retailers, recyclers and local governments to innovatively collect and recycle

discarded electronics (especially TVs, PCs and cell phones).

- Federal Electronics Challenge: challenges Federal agencies to buy greener electronics and to manage retired electronics responsibly. (www.federalelectronicschallenge.net)
- Electronic Product Environmental Assessment Tool: Manufacturers, federal and state procurement officials along with other institutional purchasers, recyclers and NGOs created a tool to help government and other institutional buyers identify and purchase greener PCs and monitors. (www.epeat.net)
- Mobile phones: working with cell phone manufacturers and other stakeholders to identify and evaluate the potential for a voluntary approach to end-of-life management of cell phones at U.S. level. Also, under the Basel Convention, the U.S. is participating with 11 major mobile phone manufacturers to develop a global approach to reuse and recycling of mobile phones, which will be outlined in the guidance document *Environmentally Sound Management of Use and End-of-Life Mobile Phones* (www.basel.int/industry/index.html)
- Carpets: Carpet manufacturers, states and EPA entered into agreement to reach 40% diversion of carpet waste from disposal by 2010, largely through recycling. Industry works with government to develop product sustainability standards and to encourage government purchasing of higher recycled content carpets.
- Packaging and Containers: The Sustainable Packaging Coalition (SPC) is a working group of packaging professionals from various product sectors, including packaging materials suppliers and consumer products manufacturers and retailers. The SPC is: 1) developing a common definition for what is sustainable packaging; 2) collaborating on cradle-to-cradle packaging design initiatives; and 3) testing the concept of intelligent materials pooling as a mechanism to increase recycling of PET plastic packaging and to improve the environmental profile of PET packaging from a life cycle perspective.

5. **Promoting Energy Efficiency**

- *ENERGY STAR* ™ is a voluntary partnership that helps businesses and individuals protect the environment through superior energy efficiency. Implemented jointly by EPA and the Department of Energy, the *ENERGY STAR* label allows consumers and business to identify energy efficient products in over 40 products categories, including new homes. *ENERGY STAR* offers tools and resources to help homeowners plan and undertake home improvement projects that reduce energy bills and improve home comfort. (www.energystar.gov)

6. **Promoting Partnerships to Reduce Chemical Risks** Use the National Partnership for Environmental Priorities (NPEP) to obtain pledges from participating companies to reduce targeted chemicals through source reduction and/or increased recycling efforts. For example, NPEP partner, BP of North America's South Houston Site, using a new technology, set a goal to reduce polycyclic aromatic hydrocarbons (PAHs) in tank bottom wastes by 32,000 pounds and benzene by 70,000 pounds. (www.epa.gov/epaoswer/hazwaste/minimize/partnerships.html)
    - Promote reductions of chemicals that are pervasive and significant in products, commercial applications, or in commerce. Two specific actions are identified

under the Plan:

- Voluntary polychlorinated biphenyls (PCB) phase-out program which is designed to encourage early retirement of PCB transformers and capacitors through a national voluntary phase out programs in accordance with the goals of the Persistent Organic Pollutants (POPs) treaty.
- Get The Lead Out: A program to reduce or eliminate lead in a variety of products.

7. Promoting Remanufacture as well as Reuse and Refurbishment

- Suppliers Partnership for the Environment (SP) is an association of auto manufacturers and their Tier 1 and Tier 2 suppliers aimed at examining opportunities for remanufacture and reuse of products and vehicle components, as well as materials management and design for recyclability. SP has launched a packaging initiative to share excess containers among suppliers, including design initiatives to facilitate reuse and refurbishment.
- Promoting By Product Synergy
  - By-Product Synergy (BPS): Create synergy among diverse industries, agricultural producers and communities, which will result in profitable conversion of by-products and wastes into resources. The goal is 100% production, rather than zero waste. U.S. EPA has supported BPS projects in New Jersey and Kansas City…
- Promoting Beneficial Use of Secondary Materials
  - The goal is to increase the amount of coal combustion products, foundry sands and construction and demolition debris that can be beneficially used in an environmentally safe manner.
    - Coal Combustion Products Partnership seeks to increase the environmentally safe use of coal combustion products from 14 million metric tons in 2001 to 20 million metric tons by 2010 - a 43% increase.
    - ResourceSmart Construction is a public-private coalition to increase use of industrial by-products in building and transportation construction projects. Primary areas include: coal combustion products, foundry sand, construction and demolition debris.
    - Developing a strategy for the environmentally sound management of waste tires, including recycling, waste-to-energy, and other approaches that avoid or minimize creation of new environmentally-harmful emissions.
- Promoting Environmental Stewardship through Lean Manufacturing: EPA is pursing multiple partnerships to showcase best practices to integrate lean and environmental decision-making tools. Efforts include: 1) raising awareness about the relationship of lean production to environmental performance; 2) sharing "good practices" for improving the environmental benefits of lean initiatives; 3) developing integrated lean and environmental tools; and 4) identifying and addressing environmental regulatory "frictions" associated with lean. (www.epa.gov/lean/)

8. Removing Regulatory Barriers to Reuse and Recycling Promote reuse and recycling by removing hazardous waste regulatory barriers that can greatly impact how much material can ultimately be reused or recycled. U.S. EPA has established special conditions for certain materials when they are reused or recycled that ensure protection of human health and the environment. Overall, these conditions result in lower management costs than are associated with our generic hazardous waste regulation, thus making it easier for these materials to be reused and recycled

- Ongoing efforts to address materials such as cathode ray tubes, electroplating sludges, industrial wipes, spent petroleum catalysts, and zinc fertilizers.
- Universal Waste rules that encourage recycling of a number of materials by defining safe management standards. Materials include mercury-containing equipment, fluorescent tubes, batteries and pesticides.
- Reduced requirements for household waste and conditionally exempt wastes from small quantity generators.
- Revisions to the definition of solid waste to clarify which materials are not discarded when recycled.

9. Promoting Environmentally Smart Purchasing

- The U.S. has requirements, both legislative and pursuant to Presidential executive orders, that mandate of environmentally smart purchasing by the Federal Government.
- The Federal program is a stewardship effort to conserve resources and use economically-viable products with lesser negative impacts on human health and the environment. Its seven components focus on creating and sustaining markets for recycled materials and biobased materials, increasing energy efficiency and the use of renewable energy technologies, and reducing the toxic or hazardous constituents of products.
- The seven components are managed by the U.S. EPA (recycled content, Energy Star, non-ozone depleting substances, environmentally preferable, and priority chemicals), Department of Energy (Energy Star, energy-efficient, alternative fuel vehicles), and Department of Agriculture (biobased). (http://www.ofee.gov/gp/gp.htm)
- The Federal program applies to the entire range of goods and services purchased by Federal agencies, from office products to electronics to buildings to fleet vehicles. In addition, there are examples of applying environmentally smart considerations to weapons systems design, acquisition, maintenance, and disposal, including recycling of obsolete weapons.
- These requirements have been incorporated into agency-specific purchasing protocols. Currently, all major Federal agencies have such efforts, most notably the Departments of Defense and Energy and NASA. In addition, the Federal Highways Administration and The National Aeronautics and Space Administration researches and encourages the use of recycled materials in the construction of highways and related appurtenances.
- Every state government and many local governments also have an environmentally smart purchasing program. At a minimum, these programs require the purchase of recycled paper, and several programs also require the purchase of other recycled content or environmentally preferable products.

10. Promoting Material Flow Accounts and other related information initiatives

- The U.S. believes that material flow accounts have significant potential to assist the public and private sectors in the area of the 3Rs.
    - For the past decade, the U.S. EPA has supported several phases of work at the World Resources Institute (WRI) to develop prototype material flow accounts. (http://materials.wri.org/pubs_description.cfm?PubID=2742).
    - The U.S. National Academy of Sciences/National Research Council published a report, *Materials Count: The Case For Material Flows Analysis* (2003) (http://nap.edu/books/0309089441/html)
    - Participating in the OECD's Material Flow Accounts initiative, which is aimed at improving the knowledge base on material flows by providing guidance on how to 1) establish material flow accounts in a coherent framework; and 2) to derive related indicators.
    - Participating in the OECD's multi-year project on sustainable materials management which is focusing on both the reduction of waste volumes and the harmful properties of waste and the project will be supported by the material flow accounting initiative (above).
    - Supporting, together with several other U.S. Government agencies, in the North American Life Cycle Inventory Project. This is a public/private research partnership creating a publicly available database. (www.nrel.gov/lci)
    - Yale University, with the support of the National Science Foundation, is doing extensive research in the area of international material flow accounts, focusing especially on metals.
    - The State of Washington has developed material flow information for the State, as part of their "Beyond Waste" project. www.ecy.wa.gov/beyondwaste. The states of New Jersey and Massachusetts have also tracked material throughputs

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