attributes may be needed to determine environmental preferability.

The menu of environmental performance characteristics suggests that two different approaches to soliciting information can be used. The first includes consideration of releases of pollutants that occur during the life-cycle of the product. In the research on product life-cycle assessments that have been conducted over the past several years, these releases are known as "inventory" items. Alternatively, the risks (or risk surrogates) associated with various life-cycle stages of a product can be identified. This approach seeks to identify actual environmental impacts rather than solely environmental releases. When calculating risks, general population (both environmental and human) exposures and occupational exposures need to be considered. Executive agencies may consider using both risk and release data in their decisions to purchase environmentally preferable products and services.

Additional guidance on how the menu may be used within the context of a particular product category as well as how the Ecological Priority Impacts Matrix and the List of Stressors Presenting High Risk (discussed below in Appendix D) may be applicable will be issued as part of specific guidances that will follow based on

voluntary pilot acquisitions.

If vendors/offerors use the menu as a basis for making environmental marketing claims, they should conform to the Federal Trade Commission's Guides for Use of Environmental Marketing Claims (16 CFR 260.5). A summary of the FTC's Guides is included as Appendix D. As explained in the FTC guides, claims concerning a product's environmental performance need to be supported by environmental data provided by offerors and offerors are encouraged to have the information verified by a credible, independent third party certifier to provide product users, acquisition officials and program managers with the assurance that the information they are evaluating is accurate and scientifically sound.

# Appendix B(1). Preliminary Menu of **Environmental Performance** Characteristics

# A. Natural Resources Use

- -Ecosystem impacts (endangered species, wetlands loss, fragile ecosystem, erosion, animal welfare etc.)
- -Energy consumption (including source, if known)
- Water consumption
- Non-renewable resource consumption (>200 years)
- -Renewable resource consumption (<200
- Rapidly renewable resource consumption (<2 years)

#### B. Human Health and Ecological Stressors

- -Bioaccumulative pollutants
- Ozone depleting chemicals
- Global warming gases
- -Chemical releases (Toxics Release Inventory (TRI) list chemicals or others)
- Ambient air releases (other than TRI, including volatile organic compounds & particular matter)

- -Indoor environmental releases (consumer and occupational)
- -Conventional pollutants released to water
- -Hazardous waste
- —Non-hazardous solid waste (municipal solid waste, large volume waste, surface impoundments)
- -Other stressors

# C. Positive Attributes

- –Recycled Content
- Recyclability
- -Product Disassembly Potential
- —Durability
- –Reusability
- -Other attributes

### D. Hazard Factors Associated With Materials

- –Human Health Hazards acute toxicity carcinogenicity developmental/reproductive toxicity immunotoxicity irritancy neurotoxicity sensitization other chronic toxicity
- -Ecological Hazards aquatic toxicity avian toxicity

terrestrial species toxicity -Product Safety Attributes

corrosivity flammability reactivity

# Appendix B(2). Definitions for Terms in the Menu of Environmental Performance Characteristics

#### A. Natural Resource Use

- (1) Ecosystem impacts: Adverse impacts on the ecosystem, e.g., endangered species, wetlands loss, fragile ecosystems, erosion.
- (2) Energy consumption: The total amount of energy consumed. Different sources of energy are associated with different environmental impacts (e.g., petroleum consumption creates global warming gases while hydroelectric power may have localized site impacts on ecosystems and/or species diversity).
- (3) Water consumption: Refers to the water resources that are consumed or used.
- (4) Non-renewable resource consumption: Those resources consumed that are not renewable in 200 years (e.g., fossil fuels,
- (5) Renewable resource consumption: Those resources consumed that are renewable in 2 to 200 years (e.g., timberbased products).
- (6) Rapidly renewable resource consumption: Those resources consumed that are renewable in less than 2 years (e.g., grain-based feed stocks).

#### B. Human Health and Ecological Stressors

- (1) Bioaccumulative pollutants: Those chemicals that bioconcentrate in the environment as described in the Significant New Use Rule for new chemicals. (See 40 CFR 721.3)
- (2) Ozone depleting chemicals: Ozone depleting chemicals have been defined in the Protection of Stratospheric Ozone Final Rule, (58 FR 65018, December 10, 1993).

- (3) Global warming gases: Global warming gases are listed in Climate Change 1992, The Scientific Report on the IPCC Scientific Assessment, Table A 2.1.
- (4) Chemical releases: This refers to ambient releases of chemicals of concern such as those reported on the Toxics Release Inventory (TRI) of the Emergency Planning and Community Right-to-Know Act. The current list is reported in 40 CFR 372.65.

(5) Ambient air pollutants: Refers to pollutants for which ambient air quality standards have been developed (see 40 CFR 50.4-50.12). These include nitrogen dioxide, sulfur dioxide, ozone precursors, particulate matter, carbon monoxide and lead.

(6) Indoor environmental releases: This refers to releases to an indoor environment of chemicals of concern such as those reported on the TRI in both occupational and consumer settings.

(7) conventional pollutants: Conventional pollutants are defined in 40 CFR 401.16. . These include biochemical oxygen demand, total suspended solids, fecal coliform, pH, and oil and grease.

(8) Hazardous waste: Quality of Resource Conservation and Recovery Act (RCRA) hazardous waste as defined in 40 CFR 261.3.

(9) Non-hazardous waste: Quantity of solid waste as defined in 40 CFR 261.3. Includes municipal solid waste, large volume (e.g., oil and gas, mining, etc.) waste and solid disposed of in surface impoundments.

(10) Other stressors: Any other stressors associated with the product or service but not captured elsewhere.

# C. Positive Attributes

- (1) Recycled content: Percentage of recovered material content (see Federal Trade Commission guidelines mentioned above for more details). Executive agencies are required to purchase EPA-designated items with recycled content (40 CFR part 247). Purchasers may want to consider whether the material contains pre-consumer or postconsumer recycled content. Post-consumer recycled content or material that would have otherwise been incinerated or landfilled is considered to be better for the environment than manufacturers' scrap material that would have, in any case, been incorporated into the product. Refer to FTC's "Guides for the Use of Environmental Marketing Claims."
- (2) Recyclability: Refers to products or materials that can be recovered from or otherwise diverted from the solid waste stream for the purpose of recycling. It should be noted, however, that although technically most materials may be recyclable-i.e., processed and used-whether a product or a material is actually recycled depends to a large extent on the community availability of collection and use programs for the materials. Refer to FTC's "Guides for the Use of Environmental Marketing Claims.
- (3) Product disassembly potential: Refers to the ease with which a product can be disassembled for maintenance, parts replacement, or recycling.

(4) Durability: Refers to the expected lifetime of the product.

(5) Reusability: Refers to how many times a product may be reused. Since reusable products, in general, may require more up