RESPONSIBLE PACKAGING GUIDELINES FOR THE ORGANIC INDUSTRY

How to Use the Guidelines

These Guidelines were developed to help companies consider the environmental implications of packaging choices. There are no formulas presented by which to judge how "ecologically sound" a package is. Rather, concepts and questions are presented to help packaging professionals address waste and materials considerations as related to their particular packaging situations.

Responsible Packaging Guidelines' Three Legs:

There are three legs to the dialogue concerning responsible packaging:

1. **Transparency** of content and process in determining these guidelines, and which materials and inputs are preferred.
2. **Extended Producer Responsibility (EPR) -** a strategy designed to promote the integration of environmental and social costs associated with products throughout their life cycles into the market price of the products.
3. **Ecological Principles** drive the definition of "what is" either recyclable as a technical nutrient in manufacturing cycles, or compostable as a biological nutrient in nature.

I. ECOLOGY & WHOLE-SYSTEMS BASED DESIGN PRINCIPLES

The Responsible Packaging Guidelines are grounded in ecological science and whole systems design principles. Appendix A lists key concepts and definitions.

II. EVALUATION OF THE MATERIAL TYPES BY THEIR ENVIRONMENTAL-SOCIAL IMPACT THOUGH LIFECYCLE

These Responsible Packaging Guidelines categorizes each material type as:

- "Preferred Materials" = green light
- "Transition Away from Materials" = yellow light
- "Obsolete Materials" = red light No new packaging allowed that contain any % of these materials; these materials must be eliminated from your packaging and ingredient supply chain by a set date.
- "Extended Producer Responsibility (ERP) & Infrastructure Considerations" Attention to systems for recovery.

Wood / Paper Fiber (biological nutrients)

Preferred Materials:

- Highest recycled content without compromising required strength and quality

- Virgin-wood fibers certified by an independent, third-party sustainable forestry organization
- Sustainably grown fibers such as organic cotton, hemp, and bamboo
- Corrugated constructed with wax replacement materials
- When these materials are used in packaging they should be composed of high recycled content.

Transition away from Materials:

- Reduce usage of hazardous chlorine compounds
- Wax Impregnated Medium, Curtain Coated Corrugated, Cascade Boxes
- Pesticides and herbicides used in forest management.

Obsolete Materials:

- NO GMO crop source for bio-based (green cell) anything
- No ancient or protected forested materials
- No toxic and persistent chemicals, or heavy metals, used in finished product as adhesives and color agents.

Aluminum, Steel and Glass (technical nutrients)

Preferred Materials:

- Highest recycled content without compromising required strength and quality.
- Reusable / refillable glass packaging schemes for products that people prefer in glass (e.g. Wine, microbrews).

Extended Producer Responsibility & Infrastructure Considerations:

- Develop bioregional recycling infrastructure: at least 30 to 50 recycling materials centers in North America for these technical nutrients. Set goal of 80% recycling rate, then 90% , etc.
- Recreate reusable / refillable glass packaging schemes for products that people prefer in glass (e.g. Wine, microbrews).

Fossil-based Plastics (technical nutrients)

Preferred Materials:

- Highest recycled content without compromising required strength and quality)
- High-Density Polyethylene (HDPE) #2 rigid & film Recycled (rHDPE) #2
- Low-Density Polyethylene (LDPE) #4 film Recycled (rLDPE) #4 film
- Polyethylene Teraphthalate (PET) #1 rigid Recycled (rPET) #1
- Polypropylene (PP) #5 rigid Recycled (rPP) #5

Obsolete Materials:

- No toxic and persistent chemicals, or heavy metals, that can leach into the finished product
- Polyvinyl Chloride (PVC) #3 film and rigid
- Polyurethanes (PU)
- Polystyrene (PS) #6 film and rigid
- Acrylonitrile Butadiene Styrene (ABS)
- Polycarbonates (PC) #7 film and rigid, bisphenol A
- Acrylic
- Ethylene Vinyl Acetate (EVA)

Extended Producer Responsibility & Infrastructure Considerations:

- Develop bioregional recycling infrastructure: at least 200 recycling materials centers in North America for these technical nutrients. Set goal of 50% recycling rate, then 80%, etc.
- Create reusable / refillable packaging schemes for products that people prefer in these plastics.

BioBased Materials (such as non-tree fiber or green-cell-based plastics)

Preferred Materials:

- Biobased material(s) are organic material(s) in which the carbon comes from contemporary (non-fossil) biological sources.
- Biobased content is the amount of biobased carbon in the material or product as a fraction weight (mass) or percent weight (mass) of the total organic carbon in the material or product. ASTM Method D6866-05 is the US government approved method for determining the renewable/biobased content of biobased products.

Obsolete Materials:

- NO GMO crop source for bio-based (green cell) anything

Extended Producer Responsibility & Infrastructure Considerations:

- For Bio-based Materials Guidelines, see: http://www.sustainablebiomaterials.org/sites/default/files/SBC%20Guidelines%20for%20Sustainable%20Bioplastics%20May%202009%20Vers%201.0.pdf
- At the end of the product's life, the product/package must be:
    - certified and labeled compostable by an acceptable certification organization or program:
    - Biodegradable Products Institute (North America);
    - AIB Vincotte Inter (Belgium);
    - Japan Bioplastics Association (Japan);
    - DIN CERTCO (European Union); or• Any other third-party certification program that meets at a minimum the ASTM D6400 criteria or equivalent . The product must meet all aspects of D6400

Bioplastics materials examples:

- Starch based plastics
- Polylactide acid (PLA) plastics
- Poly-3-hydroxybutyrate (PHB)
- Polyamide 11 (PA 11)

Production/Manufacturing Additives, Colorants, Adhesives, Bleaching Agents, etc

Transition away from Materials:

- Persistent organic pollutants (POPs) and other persistent bioaccumulative toxic chemicals (PBTs)
- Carcinogens
- Neurotoxins
- Reproductive toxicants
- Developmental toxicants
- Endocrine disruptors
- Mutagens

- All halogenated chemicals, including brominated or other halogenated flame retardants

The Green Screen for Safer Chemicals, developed by Clean Production Action (www.cleanproduction.org) is a protocol for rating chemicals based upon a series of characteristics of persistence, bioaccumulation potential and toxicity and the level of testing available to confirm safety.

III. WASTE PREVENTION & MAXIMIZING RENEWABLE RESOURCES

Reduce & Eliminate Packaging

- Eliminate unnecessary packaging, extra layers of packaging
- "right-size" packages appropriately for contents and optimize material strength
- Low weight for energy saving in transport

Reusable Packaging

- Facilitate take-back programs
- Utilize multi-use reusable containers, crates, and pallets

Recyclable/Compostable Packaging

- Use materials made of highest recycled content , with preference for high post consumer recycled material (PCR)
- Avoid mulit-material packaging, preference for single material for easy sorting and recycling/composting.

Renewable Energy & Materials in Production

- Use clean renewable energy sources in package manufacturing process (solar, wind, low-impact hydro & biomass)
- Use materials made of renewable bio-based sources that come from agricultural systems that are sustainable for farmers, workers, environment and community—i.e. non-toxic, promote biological diversity, protect air & water quality, fair labor, and non GMO.

Extended Producer Responsibility

- Design products and component materials for recovery (zero waste). Use materials that are non-toxic, that can be easily disassembled and sorted for recovery into either biological or technical nutrient streams (see Appendix A *Cradle to Cradle* design principles). Take responsibility for ensuring recovery options at end of the product/package use, support consumer education and infrastructure needs.

IV. CONSERVATION & COMMUNITY BENEFITS

- Support production and manufacturing with verifiable good labor practices—fair wages, protection of workers rights, reduction of worker exposures to toxic chemicals, safe working conditions.

- Support materials and processes that protection and respect common community resources such as local air, water, land, and biodiversity.

- Reduce gas emissions throughout packaging lifecycle, look for low-impact production of feedstock, through product use and disposal.

- Reduce transportation impacts --Decentralize packaging production, buy local to reduce the environmental footprint of production, transportation, and consumption.

V. ACCEPTABLE "GREEN" PACKAGING CLAIMS

FTC Guidelines are the Baseline Minimum:

- FTC Environmental Guidelines http://www.ftc.gov/bcp/conline/edcams/eande/index.html

- How can one be sure that stated environmental claims are actually true?

- Manufacturers have been known to make misleading, trivial, irrelevant and false statements on packaging. Statements like "biodegradable" or "contains recycled content" or "earth friendly" are so vague as to have no practical meaning.

- The more specific a claim, the easier it is to verify.

- Non-authentic (vague), or non-third-party-verified, claims are to be avoided. This is true whether the claims are on the package, or used in marketing collateral, or advertising.

- The FTC seeks to prevent false or misleading marketing claims, including environmental or "green claims." The FTC's Environmental Marketing Guides, also called the "Green Guides," apply to all forms of marketing for products and services: advertisements, labels, package inserts, promotional materials, words, symbols, logos, product brand names and marketing on the Internet or via email.

- These web pages are designed to help consumers and businesses understand the FTC's Environmental Marketing Guides, and learn about other environmental and energy areas of concern to the FTC:

- FTC Green Guides Review:
http://www.ftc.gov/bcp/edu/microsites/energy/about_guides.shtml

51% Bar for Any Recovery, or "next-life", Claim:

- With the claim of "recyclable" or "compostable" Ask: Is this true 51% of time the consumer has to "recycle" or "compost" that package?

- Do they have reasonable (easy) access to a system of recovery and reprocess for that claim to be actualized?

- Claims of "recyclable" and/or "compostable" should be true, at minimum, 51% of time to be claimed, starting at a set date.

VI. PRICE, BRANDING, PERFORMANCE, AVAILABILITY

In order for packaging to be sustainable, we must seek to balance social, environmental & economic concerns. The economy is a subset of nature, so ultimately industry must learn to operate a market with accordance to the laws of nature. Yet for any business to move towards more ecologically sound and socially responsible packaging, the package must adequately protect you products, providing the right performance, branding, availability and price point.

Adapted from, ***The Necessary Revolution*** **Peter Senge 2008**
How business can work together towards creating a sustainable world:

- Be creative.
- Start seeing systems—awareness of the larger systems in which your business is operating, patterns and trends.
- Collaborate across boundaries—engage customers, supply chain, broader industry, community, government and beyond , to bring about a collective vision of a zero waste systems.
- Create a desired future—move from reacting to creating. Become an early adopter, explore materials pooling across the industry.

Remember to *benefits* of embracing sustainability leadership:
1. There is significant money to be saved.
2. There is significant money to be made.
3. You can provide your customers with a competitive edge.
4. Sustainability in a point of differentiation.
5. You can shape the future of your industry.
6. You can become a preferred supplier.
7. You can change your image and your brand.

APPENDIX A: ECOLOGY & WHOLE-SYSTEMS BASED DESIGN PRINCIPLES

The following are key concepts and definitions.

Organic Farming

Organic farming is foundational to ecological and social sustainability, it relies on crop rotation, green manure, compost, biological pest control, organically approved pesticide application and to maintain soil productivity and control pests, excluding or strictly limiting the use of synthetic fertilizers and synthetic pesticides, plant growth regulators, livestock antibiotics, food additives, and genetically modified organisms.

The Natural Step *Karl-Henrik Robert* www.naturalstep.org

In order to reach sustainability the following four "systems conditions" must be met:

- Nature must not be systematically subjected to increasing concentrations of substances extracted from the Earth's crust (such as fossil fuels and heavy metals).
- Nature must not be systematically subjected to increasing concentrations of substances produced by society (such as synthetic toxic substances and materials).
- Nature must not be systematically manipulated, degraded, impoverished, or over harvested (such as over-cutting forests, depleting soils, polluting streams, or driving species to extinction)
- Resources must be used fairly and efficiently to meet the basic needs of people worldwide (such as producing more products with less resources and distributing them equitably).

Natural Capitalism *Paul Hawken, Amory & Hunter Lovins* www.natcap.org

In order to reach sustainability human society must:

- "Live on the "interest" of nature not the "principle"—Sustaining, restoring, and expanding the stocks and flows of natural capital. Stocks of natural capital include productive uncontaminated topsoil, clean water, clean air, a predictable climate, fertile forests, healthy estuaries and oceans.
- Radically increase productivity in the use of natural resources—efficient and effective use of matter and energy.
- Shift to biologically inspired production models and materials—Reducing toxic throughput of materials and substances and, like nature, constantly reuse materials in closed cycles.
- Move to a "service-and-flow" business model--shift from an economy in which the sale of goods is dominant to one based on services and flows (selling performance, quality, and utility, not objects).

Cradle to Cradle *Bill McDonough & Michael Braungart* www.mcdonough.com

Design principles of sustainability:

- Move from a 'take-make-waste relationship' to nature to a 'borrow-use-return relationship'.
- Design products so they can safely recirculation back into one or both of two distinct metabolisms:

- *Biological cycles*--composed of materials that biodegrade and become food for natural cycles.
- *Technical cycles*--synthetic technical materials that stay in closed loops and continually circulate as valuable nutrients for industry.

Triple Bottom Line: Ecology, Economy, People

A sustainable economy must be built on the triple bottom line:

- Financial Bottom Line Considering the impacts on financial capital: cash flows, profits, shareholder value and tomorrow's economic viability.
- Social Bottom Line Considering the impacts on social capital: employees, local community, people in other regions/counties where raw materials are produced or are disposed of, and future generations.
- Environmental Bottom Line Considering the impacts on natural capital: the stocks and flows of ecological processes and species.

Zero Waste www.zeri.org

- Eliminate waste everywhere you can. Business should to "do more with less until everything is done without producing waste."
- All forms of waste should be eliminated (not just wasted motion or solid waste), including all liquid, gaseous, hazardous, discharges into the air and solid wastes.
- Result is creation of multi-functional closed-loop production systems.

Lifecycle and Systems Thinking

When creating a product consider energy, waste, material impacts in the entire lifecycle from 'upstream' raw materials, though manufacture and use, to 'downstream' disposal (can it be a raw material for another process?). When we start 'seeing systems' we solve problems more effectively, considering the entire whole dynamic process and interrelationships at work. Systems thinking requires taking a step back from day-to-day problems , to analyze the underlying forces that contribute the problems, then to work to create new models, rather than fixing 'symptoms' alone.

Precautionary Principle

The precautionary principle was explicitly recognized during the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, 1992, and included in the Protocol on Biosafety signed in the Convention on Biological Diversity,28 January 2000 . It justifies early action in the case of uncertainty and ignorance in order to prevent potential harm to the environment and human health: "the principle states that potential environmental risks should be dealt with even in the absence
of scientific certainty".

Fair Trade

I FOAM "Principle of fairness" Fairness is characterized by equity, respect, justice and stewardship of the shared world, both among people and in their relations to other living beings. This principle emphasizes that those involved in organic agriculture should conduct human relationships in a manner that ensures fairness at all levels and to all parties - farmers, workers,

processors, distributors, traders and consumers. Organic agriculture should provide everyone involved with a good quality of life, and contribute to food sovereignty and reduction of poverty. It aims to produce a sufficient supply of good quality food and other products. Natural and environmental resources that are used for production and consumption should be managed in a way that is socially and ecologically just and should be held in trust for future generations. Fairness requires systems of production, distribution and trade that are open and equitable and account for real environmental and social costs.