

## Appendix G: Planning Template

This template is meant to help the packaging professional work through the design procedure presented in this Guideline. Some of the questions used in the template have been adapted from the IoPP Packaging Reduction, Recycling & Disposal Guidelines.

The purpose of this template is to help the packaging professional ask the right questions in the right order to incorporate environmental considerations with a minimal impact on design time. The questions should help highlight where the environmental impact of a package is coming from, so the professional can determine if it can be reduced.

### ***Environmental Packaging Procedure***

#### **Step 1: Identify Environmental Goals and Initiatives**

1. What is the company's environmental policy?

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2. What environmental issues have a high priority in your company?

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3. What general processes are in place to meet environmental goals and initiatives?

Design for the Environment

Take-Back and Recycling Programs

Restriction of Hazardous Substances Compliance

Supplier Responsibility

Other: \_\_\_\_\_

4. Does the package meet the goals of applicable Environmental Stewardship Programs (such as company environmental policies, action plans, etc.)?

Yes, the package meets all goals.

No, the package does not meet the goals but problem areas have been identified (see below) and are being mitigated.

No, the package does not meet the goals; other requirements (i.e., business considerations) do not allow the package to meet the goals.

5. What environmental goals and initiatives does the package fail to meet?

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## Step 2: Identify the Destination of the Package

1. To what regions is the package going?

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2. What are the end-of-life options at the destination for each material?

Material 1:	Material 2:	Material 3:	Material 4:
<input type="checkbox"/> Recycling	<input type="checkbox"/> Recycling	<input type="checkbox"/> Recycling	<input type="checkbox"/> Recycling
<input type="checkbox"/> Reuse	<input type="checkbox"/> Reuse	<input type="checkbox"/> Reuse	<input type="checkbox"/> Reuse
<input type="checkbox"/> Landfill	<input type="checkbox"/> Landfill	<input type="checkbox"/> Landfill	<input type="checkbox"/> Landfill
<input type="checkbox"/> Incineration	<input type="checkbox"/> Incineration	<input type="checkbox"/> Incineration	<input type="checkbox"/> Incineration
<input type="checkbox"/> Other: _____	<input type="checkbox"/> Other: _____	<input type="checkbox"/> Other: _____	<input type="checkbox"/> Other: _____

3. How will the storage conditions for this region affect the protection requirements of the package?

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## Step 3: Identify Relevant Regulations

1. To what regulating entities will your package be subject (international, federal, state, etc.)?

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2. With what regulations must your package comply?

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3. Will existing or proposed legislation (e.g., package taxes, bans, deposits, solid waste bills, etc.) affect the package during its service life?

Yes, on the federal level: \_\_\_\_\_

Yes, on the state level: \_\_\_\_\_

Yes, on the local level: \_\_\_\_\_

No

Don't know

4.a. Are regulatory requirements consistent for all destinations?

Yes

No. How? \_\_\_\_\_

b. If "no", can the package be tailored to each destination, or should it be designed to meet regulations in all destinations?

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5.a. Does your company act in an advisory capacity to federal, state and/or local governments to ensure that they have access to accurate packaging data?

Yes. How? \_\_\_\_\_  
 No

b. If “yes”, are the packaging structural design requirements fully considered by corporate lobbyists?

Yes  
 No

### Step 4: Mode of Shipping Selection

1.a. What are the available shipping methods that meet the business requirements (time demands, cost, value of product, etc.)?

\_\_\_\_\_

b. How will each of these shipping methods affect the protection needs of the package?

\_\_\_\_\_

c. How will each of these shipping methods affect the environmental impact of the package?

\_\_\_\_\_

d. How is the shipping cost determined?

Truckload (volume)  
 Actual Weight  
 Dimensional Weight

e. Will the package require additional packaging at any of these steps?

Yes: \_\_\_\_\_  
 No

f. If “yes”, how will the outer or inner packaging used for shipment and distribution of goods be treated at end-of-life?

Recycling  
 Reuse  
 Landfill  
 Incineration  
 Other: \_\_\_\_\_

g. Has a resource recovery and recycling system been established in cooperation with customers to collect and reuse distribution packaging waste that does not reach the ultimate consumer?

Yes  
 No  
 No, but a system is in development

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2. Is there an opportunity to use a reusable, returnable container program to reduce waste?

Yes

No

3. Are programs in place to require reusable or recyclable secondary packaging from suppliers?

Yes

No

No, but a system is in active development

### **Step 5: Identify Company Specific Requirements**

1. What are the protective requirements for the package?

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2. Has marketing been consulted to determine their needs and the target market?

Yes

No

3. Is there a “green” marketing campaign that this product can support?

Yes: \_\_\_\_\_

No

4. What are the handling requirements of the distribution system?

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5. How high are your pallets and are they going to be double/triple stacked?

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### **Step 6: Raw Material Selection**

1.a. What materials were considered for this package?

Component 1: \_\_\_\_\_

Component 2: \_\_\_\_\_

Component 3: \_\_\_\_\_

Component 4: \_\_\_\_\_

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b. What is the source of the selected materials?

Material 1:	Material 2:	Material 3:	Material 4:
<input type="checkbox"/> Renewable	<input type="checkbox"/> Renewable	<input type="checkbox"/> Renewable	<input type="checkbox"/> Renewable
<input type="checkbox"/> Nonrenewable	<input type="checkbox"/> Nonrenewable	<input type="checkbox"/> Nonrenewable	<input type="checkbox"/> Nonrenewable
<input type="checkbox"/> Virgin	<input type="checkbox"/> Virgin	<input type="checkbox"/> Virgin	<input type="checkbox"/> Virgin
<input type="checkbox"/> Recycled	<input type="checkbox"/> Recycled	<input type="checkbox"/> Recycled	<input type="checkbox"/> Recycled

c. Are any materials going to be charged a fee or tax in their destination?

Yes. What? \_\_\_\_\_  
 No.

d. What are the primary environmental impacts of the selected materials?

Material 1: \_\_\_\_\_  
Material 2: \_\_\_\_\_  
Material 3: \_\_\_\_\_  
Material 4: \_\_\_\_\_

2.a. Do these material options meet the company-specific requirements?

Yes  
 No. Why? \_\_\_\_\_

b. Do the material options meet applicable regulatory requirements?

Yes  
 No. Why? \_\_\_\_\_

3.a. Is the package mono-material or multi-material (e.g., laminated or co-extrusion)?

Mono-material  
 Multi-material

b. If the package is multi-material, are current recycling systems capable of handling these multi-material packages?

Yes  
 No

c. If there is not a recycling system in place to process the multi-material package, is your company pursuing the development of such a system (either alone or in conjunction with industry, government, or academia)?

Yes  
 No

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4. Which materials were selected for this package and why?

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5. Is this combination of materials the most environmentally sound design possible without compromising product integrity?

Yes

No. Why? \_\_\_\_\_

6. Do the materials need to be further separated to increase their recycling value or to avoid impeding the recycling process?

Yes. How? \_\_\_\_\_

No

7.a. Has the package and its components (e.g., inks, dyes, pigments, stabilizers, solders, and adhesives) been made without the use of toxic cadmium, lead, mercury, and hexavalent chromium?

Yes

No. Why? \_\_\_\_\_

b. If the package material currently uses toxic materials, can they be removed without compromising the package's functions?

Yes

No. Why? \_\_\_\_\_

c. If not, does this violate any regulations at the destination of the package?

Yes

No

8.a. Can the package's materials be landfilled safely without leaching hazardous byproducts or otherwise causing harm to the environment?

Yes

No. Why? \_\_\_\_\_

b. If no, can the package be designed to avoid problems in landfill disposal?

Yes. How? \_\_\_\_\_

No

9. Can the package be incinerated safely to recover the energy value of the packaging materials without harmful ash residue or emissions?

Yes

No. Why? \_\_\_\_\_

10. Does the package contain sufficient combustible materials to be reprocessed for safe burning and energy recovery?

Yes

No

## Step 7: Design the Package

1. Can any amount of packaging be reduced and the package still meet these requirements?

Yes, the package or one of its components can be eliminated.

No, all packaging or components that are not required have been eliminated.

2. Is the package easy to disassemble into its recyclable component parts?

Yes

No. Why? \_\_\_\_\_

3. Does the design of the package support the available end-of-life options?

Yes

No. Why? \_\_\_\_\_

4. Can the package be made smaller and/or designed to be compacted by consumers or waste management companies so that it takes up less collection/landfill space?

Yes

No. Why? \_\_\_\_\_

5. Does the package fit well on existing or new machinery lines?

Yes

No. Why? \_\_\_\_\_

6. Does the package meet the handling requirements?

Yes

No. Why? \_\_\_\_\_

7. Does the package provide space for marketing needs?

Yes

No. Why? \_\_\_\_\_

8. Does the package provide space for environmental labels?

Yes

No. Why? \_\_\_\_\_

9. Is the package easy and safe to open while meeting security concerns?

Yes

No. Why? \_\_\_\_\_

10.a. Has the actual weight of the package been minimized?

Yes.

No

Weight: \_\_\_\_\_

b. Has the dimensional weight of the package been minimized?

Yes

No

Weight: \_\_\_\_\_

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11. Is the environmentally-responsible packaging program economically viable?  
 Yes, the program has passed testing for viability.  
 No, the program adds significant cost to the product.  
 Don't know, no analysis has been performed.

### Step 8: Environmental Characterization

1. What are the required labels for your package?
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- 2.a. Are the notable environmental characteristics of the package effectively and appropriately portrayed on the package?

Yes

No. Why? \_\_\_\_\_

- b. Could the environmental characterization be viewed as deceptive or misleading?

Yes. How? \_\_\_\_\_

No

- 3.a. Is labeling leading to a larger package than is necessary for the product?

Yes

No

- b. If "yes", can the labeling be redesigned to fit on the amount of packaging required for protection?

Yes

No. Why? \_\_\_\_\_

Excerpted from *Environmental Packaging Guidance for the Electronics Industry*, Version 2.0 (April 2005), written by Brian Crumrine, Shawn Decker, Elissa Loughman, and Ryan McMullan, University of California at Santa Barbara. <http://fiesta.bren.ucsb.edu/~green-pkg/EPG.pdf>