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# UL ECVP 2990

By-Product Synergy



Environmental Claim Validation Procedure (ECVP) for By-Product Synergy, UL ECVP 2990

First Edition, Dated March 11, 2016

**Summary of Topics**

***The first edition of the Environmental Claim Validation Procedure (ECVP) for By-Product Synergy, UL ECVP 2990 has been issued.***

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**March 11, 2016**

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**Environmental Claim Validation Procedure (ECVP) for By-Product Synergy**

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## INTRODUCTION

### 1 General

1.1 This procedure describes the process for validating "By-Product Synergy" environmental claims for a network with two or more facilities from diverse industries practicing by-product synergy, and calculations of waste diversion as well as by-product synergy content in final product. These facilities reduce the need for virgin-source materials, divert waste from landfills, and localize the supply chain thus providing substantial environmental benefits

1.2 The goal of validating by-product synergy is to identify the supply chain localization, material optimization, waste minimization, and virgin material substitution achievements through active dialogue and working across facilities from diverse industries. A by-product synergy network may involve process changes and/or further processing that allow synergy practices.

1.3 For by-product that is not appeared in the final product manufactured at Recipient, the by-product resource (such as water, energy, or a certain type of material) that is saved via by-product network may be validated.

1.4 For by-product that is appeared in the final product manufactured at Recipient, the final product may claim an average or minimum amount (or percentage) of by-product synergy content.

### 2 Scope

2.1 The scope of this procedure covers the evaluation and validation of a group of two or more facilities that practice by-product synergy – matching wastes and under-valued resources at one facility with potential users as primary resources at another. This procedure addresses the impact of all materials, including leftover material, by-products, and waste, as well as energy being exchanged among facilities within a by-product synergy network under review.

2.2 This procedure is divided into two sections: the first is focused on the measurement of waste diversion via by-product synergy; the second is optional – calculation of by-product synergy content in a final product via by-product synergy.

### 3 Units of Measurement

3.1 For the purposes of this procedure, values shall be reported in accordance with the requirements of the individual criterion. If the facilities' choice of units deviates, that change shall be documented and justified as the reason and relevance for that change.



#### **4 Undated References**

4.1 Any undated reference to a code or standard appearing in the requirements of this procedure shall be interpreted as referring to the latest edition of that code or standard.

#### **5 Glossary**

5.1 For the purpose of this procedure, the following definitions apply.

5.2 **EEBY-PRODUCT SYNERGY** – Is the matching of under-valued waste or by-product streams from one facility with potential users at another facility to create new revenues or savings with potential social and environmental benefits (US BCSD).

5.3 **RECIPIENT** – The facility that participates as a recipient of materials, energy, by-products and/or waste in a by-product synergy network.

5.4 **SUPPLIER** – The facility that participates as a supplier of materials, energy, by-products and/or waste in a by-product synergy network.

### **COMPLIANCE, EVALUATION AND ASSESSMENT CRITERIA**

#### **6 Assessment Part 1: Assessment of Waste Diversion**

##### **6.1 General**

6.1.1 Facilities shall provide sufficient documentation for all materials (including leftover materials, by-products, and waste) and/or energy being exchanged, sold, or passed free of charge between facilities within the by-product synergy network in order to demonstrate specific by-product synergy practices.

##### **6.2 Qualified By-Product Materials**

6.2.1 Only materials that are unwanted by-products or wastes from Supplier that can be used as a primary resource with no (or very little) processing at Recipient will qualify for validation.

6.2.2 By-product materials from Suppliers that would need additional processing to be able to use as an input resource at Recipient will not qualify for the “By-Product Synergy” claim. Processing methods such as chemical processing or heating that will change the physical properties of received materials are not acceptable.

6.2.3 By-product materials from Suppliers that only a small proportion (<40% by weight) can be used as a primary resource with no (or very little) processing and the majority (≥60% by weight) cannot be used at Recipient will not qualify for the “By-Product Synergy” claim.

### 6.3 Qualified By-Product Synergy Methods

6.3.1 Waste materials can be exchanged, sold, or passed free of charge between facilities within a by-product synergy network.

### 6.4 Measurement of Waste Diversion Mass

6.4.1 The total amount of by-product materials, including leftover materials, waste energy, by-products, and waste, that have been used by Recipient via the by-product synergy network shall be measured and recorded as Waste Diversion Mass.

## 7 Calculation Part 2 – Optional: Calculation of By-Product Synergy Content

7.1 For by-product that is appeared in the final products manufactured at Recipient, the amount of by-product synergy material used in a single final product should be measured and recorded as Mass of By-Product Synergy Content.

7.2 The percentage of By-product Synergy Content shall be calculated using the following equation:

$$\% \text{By-Product Synergy Content} = \frac{\text{Mass of By-Product Synergy Content}}{\text{Mass of Final Product}}$$

7.3 Percentages should be rounded down to the closest whole number value when 10% or above. When under 10%, should be rounded down to one decimal place. Minimum or average percentage values may be used; however caution should be used when values are widely varying. For minimum by-product synergy content calculations the by-product synergy content documented by Recipient must never be below the minimum amount.

## 8 Information Required

8.1 The facilities within a by-product synergy network shall submit the request documentation necessary for verifying the proposed By-Product Synergy claim(s). For more information regarding required documentation, see Section 10, Information Required.

8.2 The facilities shall undergo a network audit to ensure compliance with the By-Product Synergy on-site audit criteria.

8.3 An annual review shall be required and the facilities shall complete a By-Product Synergy ECV Annual Review Declaration along with any requested documents to confirm ongoing compliance with the environmental claim(s). Re-audits may be required to ensure compliance and shall be determined during each annual review.

**9 Example Claims**

9.1 The wording of all claims should be evaluated against the United States Federal Trade Commission Guides for the Use of Environmental Marketing Claims (“Green Guides”) (or other applicable governing bodies) for guidance on environmental claim wording.

9.2 Including the time period (i.e., dates) for which a by-product synergy network has been validated in the claim wording shall be decided on a project by project basis, and will not be required. However, the dates shall be included as a footnote in the final published report.

9.3 Table 9.1 below shows acceptable claim wording.

**Table 9.1  
Acceptable claim wording**

<XX tons> of by-product synergy [by-product material name] have been used at [Recipient’s name] annually for the [product/ actual product name] production.
<XX tons> of [virgin-source materials] have been substituted at [Recipient’s name] annually via by-product synergy.
<XX kWh> of [waste energy] have been recovered and used at [Recipient’s name] via by-product synergy.
[Product/actual product name] contains a [minimum/average] of XX% by-product synergy [waste material name] content.

**10 Information Required**

10.1 Table 10.1 below describes the information required to validate environmental claims.

**Table 10.1  
Information required**

Information Required	Initial Project	Annual Review
1. All facilities within the by-product synergy network a) Facility Names and Addresses, with contact name, phone, and e-mail for facilities being validated	Yes for all	Confirm during desktop review – any new facilities to add?
2. Quality Systems a) For Supplier, quality manuals/internal processes used to track the mass of by-product materials being shipped out for by-product synergy b) For Recipient, quality manuals/internal processes used to track the mass of by-product materials received through the by-product synergy network c) ISO 9000 and/or 14000 certificates (if available)	Yes for all	Confirm if any changes have been made during desktop review. Check during audit.

Table 10.1 Continued

Information Required	Initial Project	Annual Review
<p>3. Supplier Information</p> <p>a) Product details: list products that are produced at Supplier, including corresponding model numbers</p> <p>b) Manufacturing process at Supplier</p> <p style="padding-left: 40px;">i) Description of the manufacturing processes</p> <p style="padding-left: 40px;">ii) Flowcharts showing the high level manufacturing process, input materials, finished goods, by-products, and waste.</p> <p>c) By-product materials shipped out</p> <p style="padding-left: 40px;">i) List the type(s) of by-product materials (including leftover materials, by-products, waste materials, and waste energy) being collected and shipped out as part of this by-product synergy</p> <p style="padding-left: 40px;">ii) Provide a clear explanation of how by-product materials are collected</p> <p style="padding-left: 40px;">iii) Provide a clear explanation of how by-product materials were treated before by-product synergy, including handlers' information and how much were treated for the most recent year.</p> <p style="padding-left: 40px;">iv) Collect 12 month records for by-product materials being shipped out for by-product synergy, including type of material collected/shipped, date shipped, quantity of waste materials</p>	<p>Yes for all</p>	<p>Confirm if any changes have been made during desktop review. Check during audit.</p>

Table 10.1 Continued

Information Required	Initial Project	Annual Review
<p>4. Recipient Information</p> <p>a) Product details: list products that are produced at Recipient, including corresponding model numbers</p> <p>b) Manufacturing process at Recipient</p> <p style="padding-left: 40px;">i) Description of the manufacturing processes</p> <p style="padding-left: 40px;">ii) Flowcharts showing the high level manufacturing process, input materials, finished goods, by-products, and waste.</p> <p style="padding-left: 40px;">iii) Quantities of finished goods produced during year-long time window of certification that use by-product synergy materials.</p> <p>c) Materials received</p> <p style="padding-left: 40px;">i) List the type(s) of materials being received via the by-product synergy network</p> <p style="padding-left: 40px;">ii) Provide a clear explanation of what input materials were used for its product production before by-product synergy, including purchase receipts and suppliers' information.</p> <p style="padding-left: 40px;">iii) Collect 12 month records for materials being received through the by-product synergy network, including type of material received, date received, quantity of material received.</p> <p style="padding-left: 40px;">The purpose is to verify how much materials are received through the by-product synergy network.</p> <p>d) Final product (Optional)</p> <p style="padding-left: 40px;">i) Bill of materials listing all components, chemicals with CAS numbers, and materials contained in the final product.</p> <p style="padding-left: 40px;">ii) Product formulations</p> <p style="padding-left: 40px;">iii) Documentation linking received by-product synergy materials to manufacturing process.</p>	<p>Yes for all</p>	<p>Confirm if any changes have been made during desktop review. Check during audit.</p>

Table 10.1 Continued

Information Required	Initial Project	Annual Review
5. By-product synergy process a) Transportation process: provide a clear explanation of the transportation methodology, including the equipment and/or vehicles used, and potential loss during transportation (if any) b) Description of by-product synergy process: Are waste materials exchanged, sold, or passed free of charge between facilities within the by-product synergy network?	Yes for all	Confirm during review – identify any new raw materials.
6. By-Product Synergy Content Calculations (Optional) a) Based on the mass of by-product synergy content in single final products, and the final product mass, compute the by-product synergy content %	Yes for all	Confirm if any changes have been made.

## **Appendix A**

### **A1 External References**

#### **EPA**

<http://www.epa.gov/>

#### **FTC**

<http://www.ftc.org>

#### **ISO**

<http://www.iso.org>

#### **US BCSD**

<http://www.usbcd.org>

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