



Pursuing
Zero Waste to Landfill
for the Food Industry

Empowering Trust[®]



How does waste diversion certification work?



UL's Zero Waste to Landfill (ZWTL) validation program focuses on helping organizations reduce the amount of waste they contribute to our environment and communicate their achievements with confidence.

UL 2799 Environmental Claim Validation Procedure for Zero Waste to Landfill is the underlying Standard for the ZWTL program that uses quantitative analysis of waste material flows, combined with supply chain verification, to determine how waste materials are managed and how much is diverted from the landfill. Your diversion rate is the amount of waste your organization produces that does not end up in a landfill.

The more waste that ends up in a landfill, the more harm that's done to our environment. Waste reduction is more important than simply recycling or reusing energy.

Food and beverage industry

Wasted food is the term used to describe food waste along with excess food and food loss. In 2017 about **41 million tons of food waste was generated and only 6.3%** of that waste was diverted away from a landfill.

In order to receive ZWTL validation, your organization has to calculate its waste diversion rate.

Did you know?

- Only 30% of resources are recycled
- Supply chains are at risk due to scarcity of resources
- 5% of global greenhouse gas (GHG) emissions are caused by waste decomposition

Sources: World Bank, 2012 "What a Waste; A Global Review of Solid Waste Management" "As You Sow, 2015 "Waste and Opportunity"

Confirm your claims

The ZWTL standard provides all the tools you need in order to measure, manage, and validate waste diversion claims. UL also offers supportive advisory and data management services to accurately calculate your diversion rate, understanding considerations like how to include mandated wastes, such as asbestos.



Scope:

- **Processing residue:** byproducts created as a result of the process to recover waste material
- **Mandated wastes:** waste materials that have regulated diversion requirements
- **Inadvertent landfilling:** small quantities of waste that are unintentionally landfilled
- **Liquid materials:** waste not including wastewater

Why pursue waste diversion validation?



Risk mitigation

- ✓ Reduce environmental impacts
- ✓ Reduce risks and monitor vendors



Improve cost savings

- ✓ Turn costs into revenue
- ✓ Reduce new material costs



Enhance reputation

- ✓ Green the supply chains
- ✓ Enhance competitiveness

Who can achieve ZWTL validation?

Any entity that produces waste, including:



If you have a variety of operations under one facility, information for each operation must be included for the assessment.

Entity	Facilities or campuses with a specific address and defined boundaries	Mobile vessels or businesses	Time-based events
Examples	Restaurants, farms, packaging facilities, office building cafeterias, bottle manufacturers	Food trucks and cruise ships	Festival booths, pop-up restaurants, fundraisers

Typical validation process



01 Initiate project

- Assign project manager
- Clarify scope of project if required



02 Collect documentation

- Material handler statement
- Shipping documents
- Diversion records



03 Site audit

- Set date for site audit
- Site audit based on desktop review



04 Issue report

- Summary of results of audit

What you need

There are four documentation requirements that you must present in order to be validated. UL requires these records for the 12 months leading up to the validation.



Material inventory

Finished goods and waste, all materials going in or out of the company
→ E.g., compost, prepackaged meals, beverage cans



Calculation of diversion rate

Including hauling records, waste processor information, and declarations on processing methods
→ Including exemptions for mandated waste



Manufacturing location and applicable on-site processes

→ All facilities within the entity



Quality systems

(and documentation of any estimation methods)
→ E.g., sustainability practices already in place

How does this affect your waste diversion?



How much waste are you wasting?

WASTE MANAGEMENT HIERARCHY



Source: U.S. Environmental Protection Agency, 2019 "National Overview: Facts and Figures on Materials, Wastes, and Recycling"

What can you reuse?

- Reused materials are employed in a function or application as a substitute for new commercial materials.
- E.g., dishes, food storage containers, aprons, gloves

What can you reduce or eliminate?

- Reduced material is the result of redefined processes, methods or materials that eliminate or reduce the mass of material or product discarded.
- E.g., order the appropriate amount of food, use washable cleaning items, eliminate plastic with glass bottles

What can you recycle?

- Recycled material is reprocessed from recovered material and made into a final product or into a component of a product.

What can you compost?

- Composting is the biological process of breaking organic waste into a useful substance by various microorganisms in the presence of oxygen. It also includes converting organic waste into industrial and manufactured products such as fertilizer, tallow and industrial chemicals.

Can your waste turn into energy?

- Waste-to-Energy (WtE) is the process of generating energy in the form of electricity or heat from the incineration of waste.

How is waste diversion calculated?

Diversion rate shows how much of your waste **DOES NOT** end up in a landfill.



The diversion equation

$$\text{DIVERSION RATE} = \frac{\text{Sum of mass of individual materials that are diverted}}{\text{Total mass of all material that is discarded}}$$

There are two types of diversion:



Onsite diversion

Reusing materials or reducing the overall amount of waste created

→ E.g., reusable storage containers or elimination of food trimmings with more efficient food preparation techniques



Offsite diversion

Recycling materials, using waste as energy, and composting

→ E.g., compost bins, donating leftover food

In regards to offsite diversion, the UL 2799 Standard assumes that all materials leaving the site are properly processed by the processor as they have declared. If any materials are not processed as intended, they are considered landfill while calculating your diversion rate.

If waste is not diverted, it ends up in a landfill or is incinerated without energy recovery.

Validation rates for zero waste

In order to receive a zero waste claim, your diversion rate has to be at 90% or higher. If your diversion rate includes a fractional value, the reported rate will be rounded up or down based on half-up rounding.

For example, if your diversion rate is 99.5%, your claim will be 100%.

UL identifies four levels of diversion.

Designation	Diversion rate (including WtE)
Certified Landfill Diversion Rate	<90%
Zero Waste to Landfill Silver	90 - 94%
Zero Waste to Landfill Gold	95 - 99%
Zero Waste to Landfill Platinum	100%

How do we treat waste exemptions?



There are laws that regulate how some types of waste can be disposed of, such as alcoholic beverages or contaminated food. UL 2799 allows for the exclusion of these materials from the diversion rate calculation to ensure comparability between industries and facilities with different mandated waste considerations.

In order to exempt this type of waste, you have to apply for a waiver. This application will ask for a description of the materials and a copy of the regulation mandating the disposal method for applicable waste.

Another instance where exemptions may apply is for the process of waste to energy (WtE). WtE is the process of generating energy in the form of electricity or heat from the incineration of waste. Normally, the UL 2799

Standard requires you to achieve 90% diversion through other methods besides WtE in order to be validated with a zero waste claim.

However, when WtE of materials with high energy value significantly reduces carbon emissions compared to conventional energy sources, more than 10% can be considered a source of diversion. This application will ask for a description of the materials and evidence through studies or other literature that can demonstrate the environmental benefit.

Contact UL

For companies pursuing a waste diversion program UL offers supportive services to help you implement and promote your waste reduction claims.

Visit us at <http://circular.ul.com/zwtl/p/1> for more information and a quote.



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