Zero Waste Facility Standard

Environmental Certification Services Division

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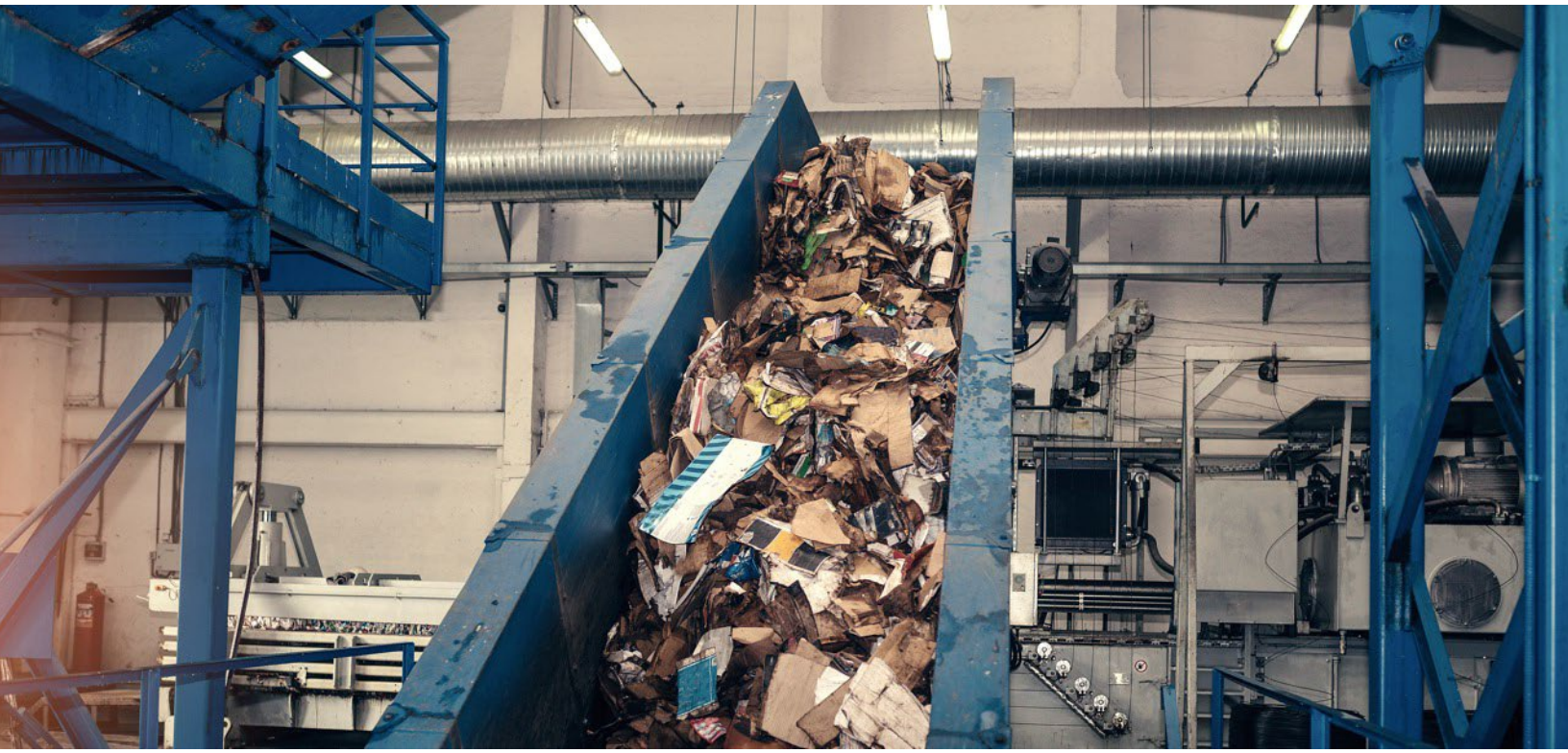

SCS standards

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Overview of the Standard

1. SUMMARY

The SCS Zero Waste Standard provides a basis for certification for municipal solid waste diversion at an Operator's facility.[1] Certification provides a third-party assurance that waste elements are diverted from landfills using any of the following methods: reuse, reclamation, resale, prevention through redesign, recycling, composting, and waste-to-energy. Certification can be used to communicate the Operator's journey towards eliminating landfill-bound waste generation at its facilities. The annual assessment captures the amount of waste diverted from landfill as a percentage of total waste generated.

This standard seeks to recognize facility operators for waste diversion practices and environmentally friendly waste management efforts. It also seeks to encourage visibility into downstream flow of waste leaving a facility. Facilities that can identify where the material flows, can potentially claim higher diversion rates.

Under this standard, all participating facilities will be evaluated, and a sample will be audited onsite. Facilities demonstrating at least 50% waste diversion can be recognized through certification under this standard. The percentage of waste diverted per facility is certified. Additionally, a certified Operator whose facility achieves 99% waste diversion can make a 'Zero Waste' certified claim. All claims are based on a twelve-month period.

The Operator's achievements in waste diversion are made publicly available in a certificate.

The certificate shall include a transparent overview of the achievement, including the following required information:

- The percent of waste diversion the company has achieved for that year. Percentage is calculated by (diverted waste - residuals) + prevented waste) / (total waste + prevented waste)
- Each method of diversion used (e.g., recycling, composting, waste-to-energy) as well as the percentage diverted using each method
- The progress the company has made in waste diversion expressed as points; for example, if a company achieved 55% diversion last year and 60% diversion in the audited year; the certificate would show '+5'.
- Whether Operator currently stores any waste (not the percentage or the total weight of stored material)
- Period of certification (12-month period being verified)

[1] Scope of the audit excludes non-municipal solid waste such as but not limited to wastewater or wasted energy

2. ZERO WASTE DEFINITIONS

2.1. **Ash:** The material collected after incineration. This includes 'fly ash' which is the airborne ash collected after incineration and 'incinerator bottom ash' which is the heavy ash found in the bottom of an incinerator post burning.

2.2. **Average Residual Percentages**: Industry averages of residuals calculated in formal studies. For example, in the state of California, the California Environmental Protection Agency (CEPA) conducted a study which showed that the residuals percentages for the year 2005 are: Single-Stream Materials Recovery Facility (MRF): 14%, Multi-Stream: 6%, Mixed Waste: 81%, Construction and Demolition (C&D) 23%.2 These can be applied to an Operator's outgoing materials if an affidavit with a specific percentage cannot be provided by the recycling facility. See definition for Residuals [2].

2.3. **Composted Material**: Materials organic in nature which are sent to a compost facility where they are allowed to decay to form relatively homogeneous and stable humus-like substance [ISO 14021].

2.4. **Construction and Demolition Debris**: Materials resulting from the construction and demolition (C&D) of buildings and other structures, including materials such as metals, wood, gypsum, asphalt shingles, roofing, concrete, rocks, rubble, soil, paper, plastics and glass, but excluding putrescible wastes (SWANA Technical Policies, Attachment B).

2.5. **Diverted Waste**: Internally processed waste and/or non-landfill-bound waste sent for external processing.

2.6. **E-Waste**: Consumer and business electronic equipment that is near or at the end of its useful life (such as computers, televisions, and cell phones) (CalRecycle).

2.7. **Hazardous Waste**: a waste listed by EPA; or a waste that is characterized by being ignitable, reactive, corrosive, or extraction procedure toxic (USDA Agricultural Resource Service).

2.8. **Mixed Waste Processing Facility**: A facility where recyclable materials are separated from waste that is landfill-bound.

2.9. **Multi-Stream Materials Recovery Facility (MRF)**: a facility at which source separated recyclables (recyclables that are separated into categories by the initial user before being picked up) are processed for sale to various markets.

[2] See Table 4, page 3:
https://www2.calrecycle.ca.gov/WasteCharacterization/PubExtracts/34106005/ExecSummary.pdf

2.10. **Operator**: Entity that owns or manages a facility.

2.11. **Prevented Waste from Redesign**: Waste that would have occurred under a former process, but has since been eliminated due to redesign of the product, packaging, or process. Prevented waste from redesign can be calculated by dividing the previous year's total weight of the (now) prevented waste by the total number of units of product created in the previous year. Then multiplying this result by the number of units generated in the current year. Process will be reviewed on a case-by-case basis to ensure claims of prevented waste from redesign are accurate.

2.12. **Re-claimed Material**: Material that would have otherwise been disposed of as waste or used for energy recovery, but has instead been collected and recovered [reclaimed] as a "NEW" material input, in lieu of new primary material, for a recycling or a manufacturing process [ISO 14021]. Example: Sawdust that undergoes no further reprocessing, is collected and made into pellets.

2.13. **Reasonable Distance**: Area defined by the Operator's location relative to the nearest recycling/composting/reuse facility and nearest Waste-to-Energy Plant: in situations where the nearest MRF is more than twice the distance to the nearest Waste-to-Energy Plant, disposal via Waste-to-Energy can be an acceptable approach under this standard.

2.14. **Recycled material**: Material sent to a recycling facility to be shredded, pelletized, or chemically altered to be remade into objects or substances for commercial use. Common materials include glass, metal, cardboard, and plastics, but may apply to other materials, as well.

2.15. **Re-used Material**: Material that would have otherwise been disposed of as waste or used for energy recovery, but has instead been collected at the end of the process to be used again for its initial purpose. Example: Foam, recompacted at end of process and used again.

2.16. **Residuals**: Waste material that remains after diversion process has taken place. Residuals percentages are specific to the type of diversion method, diverting facility, as well as to the state or city (depending on available data). Operator is responsible for obtaining these percentages in an affidavit from the facilities used for diversion. Average Residual Percentages may be used if affidavits from facilities cannot be provided. See Average Residual Percentages above.

2.17. **Single-Stream Materials Recovery Facility (MRF)**: A recycling facility into which commingled recycling materials (recyclables that are mixed together by the initial user) are accepted and processed.

2.18. **Sold Waste Material**: Material defined as waste within a facility's processes which is sold as input into another Manufacturer's Process towards production of a good or otherwise used by a buyer. Donated Material would also count under this category.

2.19. **Waste Diversion**: The practice of disposing of materials defined as wastes in an environmentally beneficial manner using the following methods: recycling, composting, re-use, reclaiming, prevention, waste-to-energy (instead of sending it to the landfill). Percentage is calculated by (diverted waste – residuals + prevented waste) / (total waste + prevented waste).

2.20. **Waste Diversion Achieved**: 50 – 100% of all waste material is diverted in one twelve-month period.

2.21. **Waste-to-Energy (WTE)**: Energy recovered from material that would have been disposed of as waste but instead has been collected through managed processes [ISO 14021]. This method includes incineration, pyrolysis, and anaerobic digestion where the main purpose and output of the process is to create energy.

2.22. **Zero Waste**: 99%+ of all waste material is diverted in one twelve-month period for a defined facility.

3. CLAIMS AND LOGOS

3.1. Operators are 'Zero Waste certified' if they achieve 99%+ diversion; all other operators can claim their exact diversion percentage (minimum 50% diversion required). Claims are based on a 12 - month period not exceeding 3 years prior to audit date, and are valid for a period of 12 months upon completion of the certification assessment.

3.2. The Operator can claim what percentage of their diversion activities is comprised of each method on on-product or off-product claims. This will be stated on their certificate.

3.3. The Operator can also make a claim related to improvement to their diversion rate from the previous year on on-product or off-product claims (only applicable to facilities undergoing re-certification). This will be stated on their certificate.

3.4. The Operator can make claims that the products they produce are made in a facility which achieved diversion certified under this standard.

3.5. For use of the SCS logo, the Operator must follow SCS Logo Use Guidelines.

4. REQUIREMENTS FOR WASTE DIVERSION

4.1. A minimum of 50% diversion over a 12-month period must be achieved for an Operator's facility to be considered for certification.

4.2. The following list shows the requirements for materials handled by the Operator's facility as well as how to calculate diversion amounts. Materials must be consistently tracked by either weight or volume.

4.2.1. Ash: No ash sent to landfill is considered diverted,[3] and shall instead be considered a waste.

4.2.2. Composted material

a. Calculate diverted amount as amount picked up by hauler for composting minus (-) residuals (as stated in affidavit or average residual percentage)
b. Affidavit with residual percentage is to be provided by Composting Facility; affidavit can either state
    i. the exact percentage of residuals in the waste sent by Operator, OR
    ii. the percentage of waste sent to landfill by Compost facility as a whole.
c. Operator must identify if the residuals has been landfilled or used for waste-to-energy, which will be counted towards the waste-to-energy diversion calculation.[4] Affidavit with this information is to be provided.

4.2.3. Electrical equipment (E-waste): 100% of waste electrical equipment must be sent to certified e-waste disposer at the end-of-life. Certified e-waste disposers include e-Stewards and R2. If using other e-waste services, contact SCS for approval.

4.2.4. Prevented waste from redesign

a. Information needed to determine the diverted amount:
    i. At least 6 months of data from previous process:
        - Total waste generated during that time (A)
        - Total number of units sold during that time (B)
    ii. At least 6 months of data from current process:
        - Total number of units sold during this time (C)
b. Prevented waste will be calculated as follows: (A/B) x C
c. Re-design process will be reviewed by the auditor.
d. Evidence and weight of total waste from former process will need to be demonstrated.

4.2.5. Re-used/ Re-claimed material: Count all re-used or re-claimed material that would otherwise have been landfilled towards diversion

a. Calculate diverted amount as amount that is reused or reclaimed at the end of the process minus (-) residuals from process
b. Facility is to calculate the residual from their own process

4.2.6. Recycled material

[3] Calrecycle: As of January 1, 2020, the use of green material as ADC does not constitute diversion through recycling and shall be considered disposal pursuant to PRC Section 41781.3. (2)(A).
[4] https://www.calrecycle.ca.gov/docs/cr/75percent/mrfperfstds-092012wksp.pdf

a. Calculate diverted amount as amount picked up by hauler for recycling minus (-) residuals (as stated in affidavit or average residual percentage)
b. Affidavit with residual % is to be provided by Recycling Facility; affidavit can either state:
    i. the exact percentage of residuals in the waste sent by Operator OR
    ii. the percentage of waste emitted by Recycling facility as a whole
c. Operator must identify if the residuals has been landfilled or used for waste-to-energy, which will be counted towards the waste-to-energy diversion calculation.[5] Affidavit with this information is to be provided.

4.2.7. Sold material/ Donated Material

a. Calculate diverted amount as amount sold to manufacturer's as input in their process (-) residuals (as stated in affidavit or average residual percentage)
b. Affidavit with residual percentage is to be provided by Manufacturer; affidavit is to state the percentage of residuals generated from the purchased material through manufacturer's process. Affidavit must also state whether the residuals have been landfilled, used as waste to energy or otherwise diverted.
c. If it is not possible to obtain an affidavit, an industry accepted residual percentage can be used, instead. Supporting documentation must be provided. Residuals will be marked as sent to landfill unless other evidence can be provided.

4.2.8. Stored waste material

a. Stored material designated as waste that is not disposed of is to be noted on the certificate but will not counted as landfilled or diverted waste. The certificate is to state that "Waste is stored on site", but the volume or percentage of waste is not to be indicated.
b. Operator must include a plan for stored waste in its Zero Waste management plan that includes storage time and intended methods of diversion or disposal.
c. Auditor will audit to ensure that the stored wastes were diverted as indicated in subsequent audits.

4.2.9. Waste-to-Energy

a. Maximum percentage allowed without further review: 25% of total waste stream.
b. Calculate diverted amount as amount picked up by hauler for Waste-to-Energy (-) residuals (as stated in affidavit or average residual percentage)
c. Affidavit with residual percentage is to be provided by Recycling Facility; affidavit to state the percentage of residuals emitted by Waste-to-Energy facility which is sent to landfills
d. Note that the average residual percentage for Waste-to-Energy is 20% and will be counted towards landfilled total.[6]

[5] https://www.calrecycle.ca.gov/docs/cr/75percent/mrfperfstds-092012wksp.pdf

[6] https://www.epa.gov/smm/energy-recovery-combustion-municipal-solid-waste-msw#03

e. Some companies may be located in a region where their waste is not easily recycled. To use Waste-to-Energy as a diversion method for more than 25% of the total waste stream, the Operator must demonstrate that there are no facilities that can recycle, compost, or otherwise reuse the material within a *reasonable distance* (see definition above) from the facility.

4.2.10. Hazardous materials

a. To comply with the standard, the facility must only demonstrate that the hazardous material has been disposed of in accordance with legal requirements. The amount of hazardous waste is not calculated in the diversion calculation.

b. However, if the facility can demonstrate that the hazardous material has been prevented with redesign, re-purposed, or re-used (in a safe manner), the amount can be counted towards diversion, on a case-by-case basis.

5. REQUIREMENTS FOR AUDITS

5.1. Operator must demonstrate that they meet all local, state, and national laws regarding waste management including licenses, and evidence of proper disposal of all wastes.[7] Companies cited with violations related to waste handling and disposal during the prior twelve months will not be eligible for certification.

5.2. Affidavits, from external diverting facilities, are to include:

- Addresses and names of Facility and entity writing affidavit, respectively
- Volume or weight of material received
- Time boundary, for example: "For the waste received in the year 2021…" Affidavit must include the time period that is being certified
- Information regarding residuals from received waste. There are options:
  - the exact percentage of residuals in the waste sent by Operator OR
  - the percentage of waste emitted by the receiving entity as a whole (rate should be no older than five years old)
- Whether residuals from their own process has been landfilled, send for further processing, or used for waste-to-energy.
- Affirmative statement indicating that all information provided is accurate and free of errors
- Name and signature of person with authority and knowledge of information provided

5.3. **Desk Assessment**

[7] If local regulations prohibit a diversion method allowed by the standard, the diversion calculation shall be calculated both with the diversion method and without. A footnote shall be added to the certificate to indicate what the diversion percentage would be considered under local laws.

The following documents and activities are necessary to meet requirements of the standard and will be reviewed for all facilities included in scope (not just those that will undergo an on-site assessment).

5.3.1. Review of Operator's Waste Management Program. Operator must have a written Waste Management Program, which does the following:

a. Defines the company's zero waste policy
b. Lists all applicable waste regulations and a summary of how the company conforms with each one, including hazardous waste if relevant
c. Lists all wastes generated in the context of the company's operations, including hazardous waste, if applicable
d. Lists staff responsible for implementing the Waste Management Program as well as their responsibilities
e. Defines practices for disposing of electrical equipment and ash, if applicable
f. Internal practices: Describes how waste is prevented, reclaimed, reused (or recycled, composted, etc. if done on site), if applicable
g. Defines external methods of diversion: Describes how when it is not possible to have internal diversion practices, where waste is sent for recycling, composting, or waste-to-energy, or sold as input into another manufacturer's process
h. Defines internal audit process including reviewers, documents, deadlines, and action plans for findings
i. Defines critical control points and responsibilities of workers at these points to assure diversion

5.3.2. Review of Production (quantity or mass of products produced in year of production) and Standard Operating Procedures (SOPs), if applicable

This will allow auditors to understand whether the amount of waste claimed matches the amount of waste that can be expected from operations at the facility. Auditor may also request previous year's production for reference.

5.3.3. Diversion Plan with Yearly Review (Internal Audit)

a. Diversion goal with long-term plan to reach zero waste
b. Details of how diversion will be achieved each year
c. Yearly, or more frequent, internal audits to review progress towards achieving diversion goals and meeting the requirements of this standard
d. Evaluation of success of efforts
e. Update to activities

5.3.4. Waste Diversion Calculator

The Waste Diversion Calculator is a tool that will calculate a facility's diversion. Each line represents a waste material. Calculations are based on the following inputs:

i. Material Name

ii. Waste Category
iii. Amount of material and date it was diverted
iv. Method of primary diversion or disposal & receiving facility information
v. Residual rates of receiving facilities
vi. Total weight or volume diverted or landfilled; include conversion factors if using volume of material disposed
vii. Corresponding identifier for disposal: Date of disposal; Corresponding bill of lading number/ invoices number
viii. Residuals percentages, if applicable

Note: If facility shares waste management hauler with other businesses and their waste is comingled, it must be measured separately prior to comingling. Facilities can establish estimates based on measured actuals. Averages used for estimation must be updated every three months. Facility will have to demonstrate that average is correct by weighing on-site waste during the audit.

5.3.5. Traceability Documents/ Records

a. All contracts, invoices, bills of lading, and any other document which track the movement of waste materials are kept on file and will be available to the auditor; records should be kept for a minimum of five years
b. Records of training regarding handling of wastes
c. Records of internal audits of waste management

5.3.6. Training Documents

a. General training for all staff to understand diversion goals of program
b. Control point specific training for staff or contractors key in ensuring success of the program
c. Onboarding waste diversion training for all new staff within 12 months; of those involved in critical control points
d. Training for contractors involved in ensuring waste diversion at critical control points

5.4. **<u>On-Site Audit of Infrastructure and Activities</u>**

5.5. An on-site audit will be done for a sample of facilities included in scope (i.e., square root)[8]

5.6. The following activities will take place on site:

[8] De-facto on-site audits will be suspended during COVID for safety reasons. However, if facility uses averages or estimates as a baseline for calculating their diversion, and on-site audit will be required. Additionally, if stored waste is declared, an on-site audit will be required the following year.

5.6.1. Review of activities at critical control points and conduct interviews with staff (to assure training)

5.6.2. Assessment of on-site infrastructure that supports diversion activities (e.g., receptacles)

5.6.3. Review of facility signage to confirm the correct storage of waste materials

5.6.4. Review of any documents Operator would prefer to show in person, rather than sending on-line, (e.g., invoices).

5.7. **After the Audit**

5.7.1. Facilities will have the opportunity to address any non-conformities found during the audit.

5.7.1.1. Major Non-compliances are a fundamental failure to meet a requirement. These non-compliances must be resolved or closed out before a certificate can be awarded. The Operator has three months from the closing meeting to close the Major non-conformity.

5.7.1.2. Minor Non-compliances are characterized as an unusual lapse in the system and do not pose a threat to overall compliance with the standard.

5.7.1.3. Opportunity for Improvement is an observation made about an occurrence which does not impact compliance but could potentially affect the Facility's compliance in the future.

5.7.2. Auditor has two weeks to prepare report, which is then sent to SCS for technical review. The grading of a finding may change after technical review.

5.7.3. SCS finalizes report and sends to Operator for review, along with request for non-conformity closure and/or action plan, if applicable.

5.7.4. Once evidence and action plan are submitted, and payment is received in full, SCS will publish the Zero Waste certificate and send final certificate and report to Facility.

6. CERTIFICATION AND RE-ASSESSMENT

6.1. Upon completion of a successful audit, SCS will issue a checklist, report, and certificate indicating:

a. The percent of waste diversion the company has achieved for that year for each facility in scope. Percentage is calculated as:

(diverted waste - residuals + prevented waste) / (total waste + prevented waste)

b. Each method of diversion used (e.g., recycling, composting, waste-to-energy) as well as the percentage diverted using each method
c. Percent of waste sent to landfill
d. The progress the company has made in waste diversion (expressed as percent change over last year's diversion rate).
e. The names and address of facilities in scope
f. Time period for the validity of the claim
g. Whether any waste is stored on site

6.2. For continued certification, a re-assessment will occur on a yearly basis, with the sample of facilities adjusted to cover facilities not assessed during the previous year (in the event of multi-site) and/or sites deemed to have higher risk.

6.3. For a single facility, an on-site audit is required once every three years.

7. COMPLAINTS RESOLUTION MECHANISM

Operator has the right to appeal the certification decision within 30 days of receiving the final checklist. Upon evaluation of the appeal, SCS shall communicate any change in the certification decision to Operator, including justification for the decision.

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