

Analysis of State Recycling Definitions

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In an effort to document the various ways recycling may be defined, the Environmental Research & Education Foundation (EREF) identified and analyzed recycling definitions used by state agencies. Definitions for “recycle”, “recycling”, and/or similar terms were identified through a search of state codes. Definitions were identified for 49 of 50 states: a definition could not be found for North Dakota.

Definitions were analyzed based on various components, including:

- the activities considered to be part of recycling (e.g. collection, sorting, separating, processing, etc.),
- the end product of recycling (e.g. raw material, product, commodity, substitute for commercial product),
- the end uses considered as recycling (e.g. reuse, remanufacturing, composting, waste-to-energy),
- any special wastes specifically included in the definition (e.g. waste oil, household hazardous), and
- whether recycling occurs to waste materials, or materials prior to becoming waste.

Summary of State Recycling Definitions. State definitions of recycling vary widely, and based on EREF’s analysis there are at least 18 distinct ways that recycling is defined throughout the U.S. Key findings are shared below, and a table of all identified definitions is provided in the Appendix.

What activities are included in recycling? A number of activities are described as part of recycling definitions, the most common being:

- separation or sortation (29 states),
- collection (25 states),
- processing (21 states), and
- the sale or return to the economic stream (14 states).

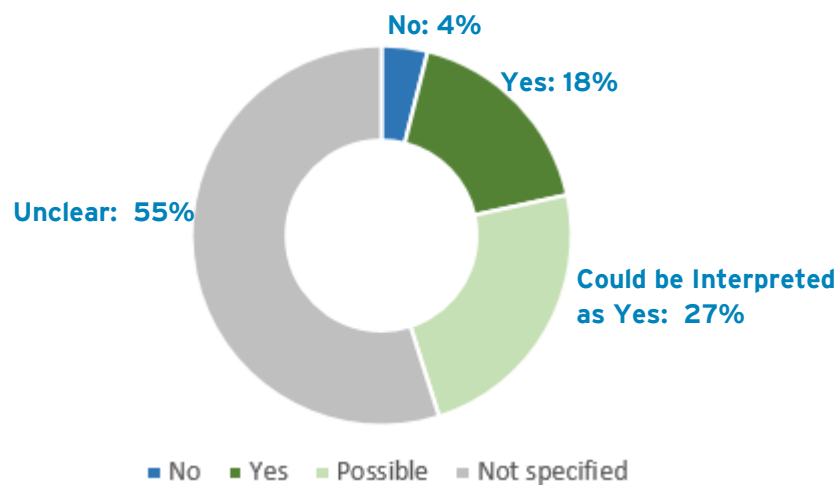
In addition, most states include possible outputs of the recycling process in their definition. The most commonly referenced outputs were:

- raw materials (28 states),
- ingredients or inputs for manufacturing (10 states),
- commodities (3 states), and
- as products themselves (23 states).

While there are some differences in wording among the definitions, recycling generally describes the activities within the traditional curbside MSW recycling system where haulers, MRFs, reclaimers, brokers, and processors facilitate the recovery and return of useable or saleable materials to the marketplace. Differences in definition become more pronounced when considering the other MSW management techniques (e.g. reuse, composting) and materials (e.g. hazardous household waste) that may fit within the activities listed above.

One of the most prevalent points of confusion in defining and measuring recycling is whether or not recycling includes composting. While recycling traditional curbside materials (i.e. paper, plastic, metal, glass) describes the physical processing of waste materials for remanufacturing (e.g. re-smelting aluminum for new cans, grinding and re-melting plastic to make new bottles, pulping recovered paper to make new paper), composting describes a biological process of breaking down organic materials and producing a nutrient-rich soil amendment (e.g., compost, fertilizer). Based on EREF's analysis, 11 states reference composting in their recycling definitions, with 9 states including composting in the definition and 2 states explicitly excluding it. An additional 13 states don't reference composting directly, but the definitions could be interpreted to include composting as a product returning to the marketplace (Figure 1).

Figure 1. Does Recycling Include Composting?



In some cases, the production of energy is also considered part of recycling. This is the case in 2 states (Florida and Kentucky), though to differing extents. Florida's definition broadly defines recycling to include waste materials used to produce "crude oil, fuels, and fuel substitutes" (Fla. Stat. § 403.703 (2017)). As a result, recycling rates for Florida counties include many additional activities in recycling. Recycling in these counties include the amount of yard trash used as alternative daily cover or disposed of in landfills with beneficial landfill gas use (e.g. vehicle fuel, heat), the amount of MSW used as process fuel, and a 1 ton recycling credit for every 1 MWh of electricity produced from MSW incineration or landfill gas-to-electricity

(Florida DEP, 2017). In contrast, while Kentucky’s recycling definition includes the production of energy it does not include traditional WTE “incineration or combustion for the recovery of energy” (Ky. Rev. Stat. Ann. §224.1-010(21) (2017)).

Recycling definitions and measurement may also include activities that bypass the traditional recycling or waste management system. For example, reuse is included in 58% of recycling definitions (29 states).

Are recyclable materials waste or something else? Additionally, recycling definitions and regulations vary based on whether or not the bottles, cans, and other materials suitable for recycling are classified as solid waste. Once discarded into a recycling bin, these materials may be considered to be waste or as something that otherwise would have become waste (i.e. non-waste). The distinction between waste and non-waste classification can be important in some states due to factors such as applicable regulations and permitting requirements. It can also expand recycling to include activities outside the scope of waste management, such as pre-consumer reuse.

In 18 definitions the materials to be recycled are part of the solid waste stream, while 11 specify these are non-waste materials (Table 1). An additional 6 definitions indicate that recycling can occur to both solid wastes and materials that would have otherwise become waste. The remaining 14 of definitions do not specify within the definition itself.

Table 1. Classification of Recyclable Materials

Recyclable Material is...	# Definitions	%
Solid Waste	18	37%
Non-Waste	11	22%
Can be Either	6	12%
Not Specified	14	29%
TOTAL	49	100%

References

Environmental Protection, Ky. Rev. Stat. Ann. §224.1-010(21) (2017)

Florida DEP, 2017 "Florida and the 2020 75% Recycling Goal, Volume 2– Appendices". <<https://floridadep.gov/sites/default/files/FinalRecyclingReportVolume2forweb.pdf>>

Resource Recovery and Management, Fla. Stat. § 403.703 (2017)

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Appendix A: Codified State Recycling Definitions

In an effort to document the various ways recycling may be defined, the Environmental Research & Education Foundation (EREF) compiled the following table of state definitions. Definitions for “recycle”, “recycling”, and/or similar terms were identified through a search of state codes. Definitions were identified for 49 of 50 states: a definition could not be found for North Dakota.

State	Definition(s)	Source
Alabama	RECYCLING. Any process by which materials are collected, separated, stored, recovered, or processed and reused or returned to use in the form of raw materials or products, but does not include the use of materials as a fuel, or for any use which constitutes disposal.	ALA. CODE § 22-27-2 (2013)
Alaska	"recycling" means the process by which a material that would otherwise be destined for disposal is collected, reprocessed, or remanufactured, and then reused;	18 AAC § 60.990.113 (2018)
Arizona	"Recycling" means the process of collecting, separating, cleansing, treating and reconstituting post-consumer materials that would otherwise become solid waste and returning them to the economic stream in the form of raw material for reconstituted products which meet the quality standards necessary to be used in the marketplace, but does not include incineration or other similar processes.	Ariz. Rev. Stat. Ann. § 49-831
Arkansas	"Recycle" means the systematic process of collecting, sorting, decontaminating, and returning waste materials to commerce as commodities for use, other beneficial use, or exchange;	Ark. Code Ann. § 8-9-402 (2017)



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State	Definition(s)	Source
California	<p>“Recycle” or “recycling” means the process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace. “Recycling” does not include transformation, as defined in Section 40201 or EMSW conversion.</p> <p>“Transformation” means incineration, pyrolysis, distillation, or biological conversion other than composting. “Transformation” does not include composting, gasification, EMSW conversion, or biomass conversion.</p>	Cal. Pub. Res. Code § 40180 (2014)
Colorado	<p>“Recyclable materials” means any type of discarded or waste material that is not regulated under Section 25-8-205(1)(e), C.R.S., and can be reused, remanufactured, reclaimed, or recycled but not including recycled auto parts or excluded scrap metal that is being recycled, or scrap that is composed of worn out metal or metal product that has outlived its original use, commonly referred to as obsolete scrap</p>	6 C.C.R. § 1007-2-1.2 (2014)
Connecticut	<p>“Recycle” for the purposes of sections 22a-241b-1 to 22a-241b-4, inclusive, of the Regulations of Connecticut State Agencies means to separate or divert an item or items from the solid waste stream for the purposes of processing it or causing it to be processed into a material product, including the production of compost, in order to provide for disposition of the item or items in a manner, other than incineration or landfilling, which will best protect the environment. Nothing in this definition shall preclude the use of waste oil as fuel in an oil burner.</p>	Conn. Gen. Stat. § 22a-241b (2012)
Delaware	<p>“Recycling” means the process by which solid waste and other discarded materials are transformed into usable materials or disposed separately in an authorized manner to reduce adverse environmental impacts</p>	Del. Code Ann. tit. 7, § 6451 (1990)



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State	Definition(s)	Source
Florida	"Recycling" means any process by which solid waste, or materials that would otherwise become solid waste, are collected, separated, or processed and reused or returned to use in the form of raw materials or intermediate or final products. Such raw materials or intermediate or final products include, but are not limited to, crude oil, fuels, and fuel substitutes.	Fla. Stat. § 403.703 (2017)
Georgia	"Recycling" means any process by which materials which would otherwise become solid waste are collected, separated, or processed and reused or returned to use in the form of raw materials or products.	Ga. Code Ann. § 48-7-40.3 (2010)
Hawaii	"Recycling" means the collection, separation, recovery, and sale or reuse of secondary resources that would otherwise be disposed of as municipal solid waste, and is an integral part of a manufacturing process aimed at producing a marketable product made of postconsumer material.	Haw. Rev. Stat. § 342H-1 (2011)
Idaho	37. Recycling. The reclamation of solid waste and its subsequent introduction into an industrial process by which the materials are transformed into a new product in such a manner that the original identity as a product is lost. 38. Recycling Center. A materials recovery facility that receives recyclables, then sorts, bales, loads, or physically alters the material and transports the commodities to markets	ISAPA §58.01.06.005 (2003)
Illinois	"Recycling, reclamation or reuse" means a method, technique or process designed to remove any contaminant from waste so as to render the waste reusable, or any process by which materials that would otherwise be disposed of or discarded are collected, separated or processed and returned to the economic mainstream in the form of raw materials or products. "Recycling center" means a facility that accepts only segregated, nonhazardous, nonspecial, homogeneous, nonputrescible materials, such as dry paper, glass, cans or plastics, for subsequent use in the secondary materials market.	415 Ill. Comp. Stat. 15/3 (2006)



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State	Definition(s)	Source
Indiana	As used in this chapter, "recycle" means to take action by which recyclable materials are recovered from the solid waste stream for purposes of: (1) use or reuse; (2) conversion into raw materials; or (3) use in the production of new products	Ind. Code §13-11-2-180 (2009)
Iowa	"Recycling" means any process by which waste, or materials which would otherwise become waste, are collected, separated, or processed and revised or returned to use in the form of raw materials or products. "Recycling" includes but is not limited to the composting of yard waste which has been previously separated from other waste, but does not include any form of energy recovery.	Iowa Code § 455D.1 (2016)
Kansas	"Recyclables" means any materials that will be used or reused, or prepared for use or reuse, as an ingredient in an industrial process to make a product, or as an effective substitute for a commercial product. "Recyclables" includes, but is not limited to, paper, glass, plastic, municipal water treatment residues, as defined by K.S.A. 65-163, and amendments thereto, and metal, but does not include yard waste.	Kan. Stat. Ann. § 65-3402 (2005)
Kentucky	"Recycling" means any process by which materials which would otherwise become solid waste are collected, separated, or processed and reused or returned to use in the form of raw materials or products, including refuse-derived fuel when processed in accordance with administrative regulations established by the cabinet, but does not include the incineration or combustion of materials for the recovery of energy.	Ky. Rev. Stat. Ann. §224.1-010(21) (2017)
Louisiana	"Recycling" means any process by which nonhazardous solid waste, or materials which would otherwise become solid waste, are collected, separated, or processed and reused or returned to use in the form of raw materials or products. (12) "Recyclable material" means those materials which are capable of being recycled and which would otherwise be processed or disposed of as nonhazardous solid waste.	La. Rev. Stat. Ann. § 30:2412 (2016)



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State	Definition(s)	Source
Maine	"Recycle" and "Recycling" means the collection, separation, recovery and sale or reuse of materials that would otherwise be disposed of or processed as waste or the mechanized separation of waste, other than through combustion, and the creation and recovery of reusable materials other than as a fuel for the generation of electricity.	06-096 CMR Chapter 400.1.Qq (2015)
Maryland	(l) "Recyclable materials" means those materials that: (1) Would otherwise become solid waste for disposal in a refuse disposal system; and (2) May be collected, separated, or processed and returned to the marketplace in the form of raw materials or products. (m) (1) "Recycling" means any process in which materials that would otherwise become solid waste are collected, separated, or processed and returned to the marketplace in the form of raw materials or products. (2) "Recycling" includes composting.	MD Env Code § 9-1701 (2013)
Massachusetts	Recycle means to recover materials or by-products which will be: (a) Reused; or (b) Used as an ingredient or a feedstock in an industrial or manufacturing process to make a marketable product; or (c) Used in a particular function or application as an effective substitute for a commercial product or commodity. Recycle does not mean to recover energy from the combustion of a material or to create a fuel. Recycle does not include composting or conversion.	30 CMR § 19.006 (2016)



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State	Definition(s)	Source
Michigan	<p>(e) "Recycling" means an action or process, such as separation, sorting, baling, or shipping, applied to reportable recyclable materials for the purposes of reuse or conversion into raw materials or new products.</p> <p>(g) "Reportable recyclable materials", subject to subdivision (h), means any of the following categories of recyclable materials that are separated from household waste or commercial waste, or from a combination of household waste and commercial waste, and that are delivered to a recycling establishment for recycling: (i) Glass. (ii) Paper and paper products. (iii) Plastic and plastic products. (iv) Ferrous metal, including white goods. (v) Nonferrous metal. (vi) Textiles. (vii) Single stream recyclable materials that include any combination of the materials listed in subparagraphs (i) to (vi).</p>	Mich. Comp. Laws § 324.17501 (1994)
Minnesota	"recycling" means the process of collecting and preparing recyclable materials and reusing the materials in their original form or using them in manufacturing processes that do not cause the destruction of recyclable materials in a manner that precludes further use;	Minn. Stat. § 115A.1415 (2013)
Mississippi	"Recyclables" means materials which are intended to be sold or delivered to the open market for recycling or processing into a marketable product.	Miss. Code Ann. § x-1-C (<year>)
Missouri	"Recycling", the separation and reuse of materials which might otherwise be disposed of as solid waste;	Mo. Rev. Stat. § 260.345 (2015)



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State	Definition(s)	Source
Montana	<p>(4) (a) "Reclaimable material" means material that has useful physical or chemical properties after serving a specific purpose and that would normally be disposed of as solid waste, as defined in 75-10-203, by a consumer, processor, or manufacturer.</p> <p>(5) "Recycled material" means a substance that is produced from reclaimed material as provided in 15-32-609.</p>	Mont. Code Ann. § 15-32-601 (2017)
Nebraska	"Recycling" means the process of separating, cleaning, treating, and reconstituting waste or other discarded materials for the purpose of recovering and reusing the resources contained therein.	Neb. Rev. Stat. § 81-1549 (2008)
Nevada	"Recyclable material" defined. "Recyclable material" means solid waste that can be processed and returned to the economic mainstream in the form of raw materials or products, as determined by the State Environmental Commission.	Nev. Rev. Stat. § 444A.013 (1993)
New Hampshire	"Recycled material" means any material that is used, reused, or reclaimed, as said terms are defined in Env-Hw 103 or Env-Hw 104.	N.H. Rev. Stat. Ann. § 104.34 (2006)
New Jersey	"Recyclable material" means those materials which would otherwise become solid waste, and which may be collected, separated or processed and returned to the economic mainstream in the form of raw materials or products;	N.J. Stat. Ann. § 13:1E-99.12 (2013)



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State	Definition(s)	Source
New Mexico	"recycling" means any process by which recyclable materials are collected, separated or processed and reused or returned to use in the form of raw materials or products;	N.M. Stat. Ann. § 74-9-3 (2006)
New York	<p>(a) "recyclable" shall address material for which technologies or systems for reuse as a secondary material exist; and (b) "recycled" shall address material containing a specified minimum percentage by weight of secondary materials content; and (c) "reusable" shall address ability to be repeatedly returned for refilling or reuse with the original product.</p> <p>"Secondary materials" means those commodities that have been reclaimed for reuse and are used in place of a primary or raw material in manufacturing a product.</p>	<p>N.Y. Envir. Conser. Law §27-0717.2</p> <p>N.Y. Envir. Conser. Law §27-0501.10</p>
North Carolina	"Recycling" means any process by which solid waste, or materials which would otherwise become solid waste, are collected, separated, or processed, and reused or returned to use in the form of raw materials or products.	N.C. Gen. Stat. § 130A-290
North Dakota	None Found	N.D. Cent. Code § 23.29.03
Ohio	"Recycling" means the process of collecting, sorting, cleansing, treating, and reconstituting waste or other discarded materials for the purpose of recovering and reusing the materials.	Ohio Rev. Code Ann. § x3736.01 (2007)
Oklahoma	16. "Recycling" means to reuse a material that would otherwise be disposed of as waste, with or without reprocessing	Okla. Stat. tit. 27A, §2-10-103 (2014)



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State	Definition(s)	Source
Oregon	"Recycle" or "recycling" means any process by which waste materials are transformed into new products in such a manner that the original products may lose their identity.	Or. Rev. Stat. § 5.00.010 (2014)
Pennsylvania	Recycling means the collection, separation, recovery and sale or reuse of metals, glass, paper, plastics and other materials which would otherwise be disposed or processed as municipal waste.	Solid Waste Pa. Cons. Stat. § 20-101 (1993)
Rhode Island	"Recycling" means the reuse or remanufacture of recovered resources in manufacturing, agriculture, power production or other processes. "Recyclable material" means any material listed as a recyclable material in the Rhode Island "Rules and Regulations for Reduction and Recycling of Municipal Solid Waste", Subchapter 20 Part 2 of this Chapter and the "Rules and Regulations for Reduction and Recycling of Commercial and Non-Municipal Residential Solid Waste", Subchapter 20 Part 1 of this Chapter or the Rhode Island Battery Deposit and Control Regulations, or oil subject to the hard-to-dispose-of tax as stated in R.I. Gen. Laws Chapter 37-15.1.	250-RICR-140-05-1.5
South Carolina	"Recycling" means any process by which materials which would otherwise become solid waste are collected, separated, or processed and reused or returned to use in the form of raw materials or products (including composting).	S.C. Code Ann. § 44-96-40 (2015)
South Dakota	"Recycling," any process by which waste, or materials that would otherwise become waste, are collected, separated, or processed and revised or returned to use in the form of raw materials or products. The term includes the composting of yard waste which has been previously separated from other waste, but does not include any form of energy recovery;	S.D. Codified Laws §34A-6-61 (1993)



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State	Definition(s)	Source
Tennessee	<p>"Recycling" means the process by which recovered materials are transformed into new products, including the collection, separation, processing, and reuse of recovered materials either directly or as raw materials for the manufacture of new products;</p>	Tenn. Code Ann. § 68-211-802 (2010)
Texas	<p>"Recycling" means a process by which materials that have served their intended use or are scrapped, discarded, used, surplus, or obsolete are collected, separated, or processed and returned to use in the form of raw materials in the production of new products. Recycling includes:</p> <p>(A) the composting process if the compost material is put to beneficial reuse as defined by the commission; and</p> <p>(B) the application to land, as organic fertilizer, of processed sludge or biosolids from municipal wastewater treatment plants and other organic matter resulting from poultry, dairy, livestock, or other agricultural operations.</p>	Tex. Code Ann. § 361.421
Utah	<p>(60) "Recycling" means extracting valuable materials from the waste stream and transforming or remanufacturing them into usable materials that have a demonstrated or potential market.</p> <p>(a) Recycling does not include processes that generate such volumes of material that no market exists for the material.</p> <p>(b) Any part of the waste stream entering a recycling facility and subsequently returning to a waste stream or being otherwise disposed has the same regulatory designation as the original waste.</p> <p>(c) Recycling includes the substitution of nonhazardous solid waste fuels for conventional fuels (such as coal, natural gas, and petroleum products) for the purpose of generating the heat necessary to manufacture a product.</p>	UAC R315-301.2(60) (2019)



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State	Definition(s)	Source
Vermont	"Recycle" means the process of utilizing solid waste for the production of materials or products, but shall not include processing solid waste to produce energy or fuel products.	Vt. Stat. Ann. tit. 24, § 417-62 (2012)
Virginia	"Recycling" means the process of separating a given waste material from the waste stream and processing it so that it may be used again as a raw material for a product which may or may not be similar to the original product;	Va. Code Ann. § 10.1-1414 (1995)
Washington	"Recycling" means transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration.	Wash. Rev. Code § 70.95.030 (2010)
West Virginia	Recycling, reuse and materials recovery. -- This involves separating and recovering valuable materials from the waste stream, composting food and yard waste and marketing of recyclables.	W. Va. Code § 22C-4-1 (2016)
Wisconsin	"Recycling" means the transfer, transporting, processing, marketing and conversion of solid wastes into usable materials or products and includes the stockpiling and disposal of nonusable portions of solid wastes, but does not include the collection of solid wastes.	Wis. Stat. § 287.13 (1995)
Wyoming	"Recycling facility" means a facility where used or waste materials are processed or broken down into raw materials which are then used to make or produce new items or products.	Wyo. Admin. Rules §020.0009.1(b)(lxxix) (2017)