



2017 Republic Services® SASB Disclosure



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This disclosure was prepared following the SASB Waste Management Sustainability Accounting Standard, Version 2018-10, using the reporting entity described in the Republic Services 2017 10-K. All data is as of December 31, 2017 for calendar year 2017.

2017 Republic Activity Metrics

| SASB Code | Activity Metric | 2017 Results |
|-------------|---|--|
| IF-WM-000.A | Number of customers by category: | |
| | Municipal | N/A |
| | Commercial | N/A |
| | Industrial | N/A |
| | Residential | N/A |
| | IF-WM-000.A Republic does not archive historical customer counts by these categories. | |
| IF-WM-000.B | Vehicle Size | 24,837 including collection fleet, service vehicles, and equipment |
| IF-WM-000.C | Number of: | |
| | Landfills | 195 active landfills 124 closed landfills 0 active hazardous landfills |
| | Transfer Stations | 204 |
| | Recycling Centers | 90 |
| | Composting Centers | 9 |
| | Incinerators | 0 |
| | All other facilities | 68 renewable energy and landfill gas projects 37 CNG fueling stations 7 TRD facilities 11 SWD wells |
| IF-WM-000.D | Amount of material managed by our business: | |
| | Total tons managed | 113 Million short tons |
| | IF-WM-000.D We believe the amount of material we manage is an appropriate metric when calculating and evaluating certain intensity comparisons. Data includes MSW, Recycling, and E&P waste tons managed. | |
| N/A | Revenue | \$10,042 Billion |

2017 Republic Sustainability Accounting Metrics

| SASB Code | Sustainability Accounting Metric | 2017 Results |
|---------------------------------------|--|--|
| Greenhouse Gas (GHG) Emissions | | |
| IF-WM-110a.1 | (1) Gross global Scope 1 emissions | 13,486,262 Metric tons CO ₂ e |
| | (2) Percentage covered under emissions-limiting regulations | 83 % |
| | (3) Percentage covered under emissions-reporting regulations | 85 % |
| | <p><i>Discussion/clarifications/assumptions/etc (including measurement/estimation methods):</i></p> <p>(1) Scope 1 emissions include emissions from landfills and fleet that are owned, leased, or operated by Republic. Scope 1 emissions are not a measured metric. For landfills, they are calculated using U.S. 40 CFR Part 98 Subpart HH, developed by the EPA and industry. These calculations are known to have a margin of error of +/-200%. Fleet emissions are based on emissions factors for the various types of fuels that are used. See Section IF-WM-110b for more details on fuel types. Sequestered carbon is not subtracted from the landfill emissions total, per GHG Protocol guidance. For more information on gasses covered, calculation methodology/protocols, etc see the 2017 GRI Report, pages 26-28, which can be found at www/republicservices.com/sustainability.</p> <p>(2) This percentage reflects the emissions that are covered by U.S. EPA's Standards of Performance for Municipal Solid Waste Landfills (US 40 CFR Part 60, Subparts WWW and XXX) and Emissions Guidelines and Compliance Times for Municipal Solid Waste Landfills (U.S. 40 CFR Part 60, Subparts Cc and Cf), as well as the State of California's Landfill Methane Control Measure (17 CCR §§ 96560 - 95476).</p> <p>(3) Only certain landfill types and those that emit >25k MTCO₂e/year are covered under emissions reporting regulations, according to the U.S. EPA Greenhouse Gas Reporting Program. Percentage also does not include fleet emissions, as they are not regulated under emissions-reporting regulations.</p> <p>CO₂e = carbon dioxide equivalents (a standard unit for measuring carbon footprints)</p> | |
| IF-WM-110a.2 | (1) Total landfill gas recovered | 78,942,711 MMBTUs |
| | (2) Percentage flared | 55 % |
| | (3) Percentage used for energy | 45 % |
| | <p><i>Discussion/clarifications/assumptions/etc (including measurement/estimation methods):</i></p> <p>(1) This total represents the amount of landfill gas that was collected in both open and closed landfills, via gas collection systems and is typically described as "landfill gas recovered." Landfill gas generated (as requested by SASB guidelines) is a calculated amount using U.S. 40 CFR Part 98 Subpart HH and is subject to error, therefore recovered landfill gas is used.</p> <p>MMBTUs = million British Thermal Units (a measure of the energy content in fuel)</p> | |
| IF-WM-110a.3 | <p><i>Description of long-term and short-term strategy or plan to manage Scope 1 and life-cycle emissions, emission-reduction targets, and an analysis of performance against those targets:</i></p> <p>In 2014, Republic established three public goals intended to drive greenhouse gas reductions in our own operations and in our customers' lifecycle operations. We developed programs that enabled us to reduce these combined emissions by 2.5 million tons of carbon dioxide equivalent over a five-year period, including:</p> | |

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|------------------------------|---|------------------------------------|---------------|----------------------------|------|--------------------------|-----|
| | <ul style="list-style-type: none"> development of at least two landfill gas-to-energy projects each year; reducing the greenhouse gas emissions from our fleet by 3%; addition of at least 150,000 tons per year of recycling capacity. <p>We achieved these goals in 2018. From 2013 through 2017, Republic reduced its own scope 1 & 2 greenhouse gas emissions by 15.6%. For more details about each of these goals and our yearly progress, please refer to the 2017 GRI Report, pages 34-37, which can be found at www.republicservices.com/sustainability.</p> | | | | | | |
| Fleet Fuel Management | | | | | | | |
| | <table border="1"> <tr> <td>(1) Fleet fuel consumed</td> <td>19,544,955 GJ</td> </tr> <tr> <td>(2) Percentage natural gas</td> <td>19 %</td> </tr> <tr> <td>(3) Percentage renewable</td> <td>7 %</td> </tr> </table> <p><i>Discussion/clarifications/assumptions/etc (including measurement/estimation methods):</i></p> <p>(1) Number includes fuel consumed by collection and service vehicles only. (2) Number includes renewable natural gas. (3) Renewable as defined consistent with the U.S. Renewable Fuel Standard (U.S. 40 CFR 80.1401) and includes renewable natural gas, biodiesel, etc.</p> <p>GJ = gigajoule (a measure of energy that enables comparisons amongst different types of fuel)</p> | (1) Fleet fuel consumed | 19,544,955 GJ | (2) Percentage natural gas | 19 % | (3) Percentage renewable | 7 % |
| (1) Fleet fuel consumed | 19,544,955 GJ | | | | | | |
| (2) Percentage natural gas | 19 % | | | | | | |
| (3) Percentage renewable | 7 % | | | | | | |
| IF-WM-110b.1 | | | | | | | |
| IF-WM-110b.2 | Percentage of alternative fuel vehicles in fleet | 19 % | | | | | |
| | <i>Discussion/clarifications/assumptions/etc (including measurement/estimation methods):</i> | | | | | | |
| | Number represents CNG vehicles as a percent of collection vehicles only. | | | | | | |
| Air Quality | | | | | | | |
| | <i>Air emissions of the following pollutants:</i> | <i>Air Emissions (metric tons)</i> | | | | | |
| IF-WM-120a.1 | (1) NOx (excluding N ₂ O) | 1,304 Metric tons | | | | | |
| | (2) SOx | 314 Metric tons | | | | | |
| | (3) Volatile organic compounds (VOCs) | 31 Metric tons | | | | | |
| | (4) Hazardous Air Pollutants (HAPs) | 49 Metric tons | | | | | |
| IF-WM-120a.2 | Number of facilities in or near areas of dense population | N/A | | | | | |
| IF-WM-120a.3 | Number of incidents of non-compliance associated with air emissions | N/A | | | | | |
| RSG-AQ-01 | SEC disclosable environmental enforcement proceedings relating to air and odor | 0 | | | | | |
| | <i>Discussion/clarifications/assumptions/etc (including measurement/estimation methods):</i> | | | | | | |
| | IF-WM-120a.1 Includes landfill emissions only. Landfill air emissions are calculated using measured landfill gas flow to flares, engineering calculations and mass balance calculations. For additional details on scope and method of calculations, please see the 2017 GRI Report, pages 26-28, which can be found at www.republicservices.com/sustainability . | | | | | | |
| | IF-WM-120a.2 Data not available for 2017. | | | | | | |

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| | IF-WM-120a.3 SASB reporting guidelines are unclear for this metric. | |
| | RSG-AQ-01 Please refer to Item 103 of SEC Regulation S-K. We had zero new proceedings relating to air/odor in 2017. The four proceedings disclosed in our quarterly filings for 2017 were continuations from prior years. | |
| Management of Leachate and Hazardous Waste | | |
| IF-WM-150a.1 | (1) Total Toxic Release Inventory (TRI) releases | N/A |
| | (2) Percentage released to water | N/A |
| IF-WM-150a.2 | Number of corrective actions implemented for landfill releases | N/A |
| IF-WM-150a.3 | Number of incidents of non-compliance associated with environmental impacts | N/A |
| RSG-ML-01 | SEC disclosable environmental enforcement proceedings relating to management of leachate, water, and hazardous waste | 0 |
| RSG-ML-02 | Total leachate collected and treated | 1.745 Billion gallons |
| | <i>Discussion/clarifications/assumptions/etc (including measurement/estimation methods):</i> | |
| | IF-WM-150a.1 We have replaced the SASB advised metric of Total Toxic Release Inventory (TRI) releases with Total leachate collected and treated (RSG-ML-02) because TRI releases are de minimis for our business. | |
| | IF-WM-150a.2 SASB reporting guidelines are unclear for this metric. | |
| | IF-WM-150a.3 SASB reporting guidelines are unclear for this metric. | |
| | RSG-ML-01 Please refer to Item 103 of SEC Regulation S-K. We had zero new proceedings relating to management of leachate, water and hazardous waste in 2017. The one proceeding disclosed in our 2017 quarterly filings was a continuation from prior years. We have added the Total leachate collected and treated metric below (RSG-ML-02) to our SASB report, because we feel that this provides context to the small number of SEC disclosable proceedings in this disclosure relative to the large amount of leachate collected and treated. | |
| | RSG-ML-02. Total reflects leachate that is treated by either Republic Services or a third party and then returned to the water cycle. | |
| Labor Practices | | |
| IF-WM-310a.1 | Percentage of active workforce covered under collective bargaining agreements | 24 % |
| IF-WM-310a.2 | (1) Number of work stoppages | 0 |
| | (2) Total days idle | 0 |
| | <i>Discussion/clarifications/assumptions/etc (including measurement/estimation methods), including reason for the work stoppage, impact on operations and any corrective actions taken:</i> | |
| | IF-WM-310a.1 As of December 31, 2017, approximately 24% of our workforce was represented by various labor unions, and approximately 6% of our workforce was covered by collective bargaining agreements (CBAs) that were set to expire during 2018. See page 111 of our 2017 10-K. | |
| Workforce Health & Safety | | |

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| IF-WM-320a.1 | (1) Total Recordable Incident Rate (TRIR) | 3.646 |
| | (2) Fatality Rate | 4.988 |
| | (3a) Near Miss Frequency Rate (NMFR) for direct employees | N/A |
| | (3b) Near Miss Frequency Rate (NMFR) for contract employees | N/A |
| IF-WM-320a.2 | Safety Measurement System BASIC percentiles: | |
| | (1) Unsafe Driving | See below |
| | (2) Hours-of-Service Compliance | See below |
| | (3) Driver Fitness | See below |
| | (4) Controlled Substances/Alcohol | See below |
| | (5) Vehicle Maintenance | See below |
| IF-WM-320a.3 | (6) Hazardous Materials Compliance | See below |
| | Number of road accidents and incidents | 162 |
| <p><i>Discussion/clarifications/assumptions/etc (including measurement/estimation methods):</i></p> <p>IF-WM-320a.1:</p> <p>(1) TRIR is a company-wide rate, including residential, commercial, and industrial collection, calculated using OSHA reporting guidelines (per 100 employees). All incidents, regardless of whether treated in-house or externally, are recorded.</p> <p>(2) The fatality rate is calculated per 100,000 full-time equivalent employees, consistent with OSHA and Bureau of Labor Statistics (BLS) reporting guidance.</p> <p>IF-WM-320a.1 (3a)/(3b) Republic does not track near miss data.</p> <p>IF-WM-320a.2 The Federal Motor Carrier Safety Administration (FMCSA) calculates BASIC percentiles for the 60+ Department of Transportation numbers under which Republic operates. These scores are available to the public at https://ai.fmcsa.dot.gov/SMS.</p> <p>We created a public goal in 2014 to reduce our Total Recordable Incident Rate (TRIR) by 7% on a year-over-year basis, from a 2014 baseline. Our safety performance (based on OSHA recordable rates) is 41% better than the industry average. For more information and our historical performance see the 2017 GRI Report, pages 47-48, which can be found at www.republicservices.com/sustainability.</p> | | |
| Recycling and Resource Recovery | | |
| IF-WM-420a.1 | (1) Amount of waste incinerated in owned facilities | 0 Metric tons |
| | (2) Percent of waste incinerated that is hazardous | 0 % |
| | (3) Percent of waste incinerated used for energy recovery | 0 % |
| | <i>Discussion/clarifications/assumptions/etc (including measurement/estimation methods):</i> | |
| <p>Republic does not own or operate waste incineration facilities. See Item 1 – Business in 2017 10-K (page 2).</p> | | |
| IF-WM-420a.2 | (1) Percentage of customers receiving recycling services by customer type: | |
| | Residential (municipal + open market) | 72 % |
| | Small container | 24 % |
| | Large container | 12 % |
| | (2) Percent of customers receiving composting services by customer type: | |
| | Residential (municipal + open market) | 25 % |
| Small container | 1 % | |

| | | |
|--------------|--|--------------------------|
| | Large container | 1 % |
| IF-WM-420a.3 | (1) Amount of material recycled | 5.4 Million metric tons |
| | (2) Amount of material composted | 453 Thousand metric tons |
| | (3) Amount of material processed as waste to energy | 43 Million metric tons |
| IF-WM-420a.4 | (1) Amount of electronic waste collected | 473 Metric tons |
| | (2) Percent of electronic waste recovered through recycling | ≥ 99 % |
| | <p><i>Discussion/clarifications/assumptions/etc (including measurement/estimation methods):</i></p> <p>IF-WM-420a.2 The customer categories shown above are consistent with Republic's financial reporting for collection services.</p> <p>IF-WM-420a.3 (1) and (2) These totals include material that is processed at Republic owned or operated recycling and composting facilities from both Republic and third-party haulers. These figures do not include material collected by Republic and taken to third-party facilities for processing.</p> <p>(3) This is the amount of MSW that goes to Republic landfills that creates renewable energy through gas to energy projects.</p> | |