



2020 GRI Report



About this Report

This report highlights the Global Reporting Initiative (GRI) General and Topic-Specific Standard disclosures relevant to our business. Although we report in accordance with the GRI Standards: Core Option, in many cases we provide disclosures and context that go beyond the requirements of Core to share additional insights into our sustainability performance. The Topic-Specific Standards relevant for reporting in accordance with GRI Core are the tier 1 topics outlined in disclosure 102-47 List of relevant sustainability topics. This GRI Report should be consulted alongside our other sustainability and ESG reporting at RepublicServices.com/Sustainability. We invite you to share your thoughts with us at Sustainability@RepublicServices.com.

Unless otherwise stated, all references in this 2020 GRI Report to “Republic,” “the Company,” “we,” “us” and “our” refer to Republic Services, Inc. and its consolidated subsidiaries. Coverage of the Company’s publicly available economic, governance, environmental and social indicators is consolidated for our business operations where data is available, unless otherwise noted.

Disclosure Regarding Forward-Looking Statements

This report contains certain forward-looking information about us that is intended to be covered by the safe harbor for “forward-looking statements” provided by the Private Securities Litigation Reform Act of 1995. Forward-looking statements are statements that are not historical facts. Words such as “guidance,” “expect,” “will,” “may,” “anticipate,” “plan,” “estimate,” “project,” “intend,” “should,” “can,” “likely,” “could,” “outlook” and similar expressions are intended to identify forward-looking statements. These statements include information about our sustainability targets, goals and programs in addition to our plans, strategies, expectations of future financial performance and prospects. Forward-looking statements are not guarantees of performance. You should not place undue reliance on any forward-looking statement. These statements are based upon the current beliefs and expectations of our management and are subject to significant risk and uncertainties that could cause actual results to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot assure you that the expectations will prove to be correct. The inclusion of information in this report should not be construed as a characterization regarding the materiality or financial impact of that information. More information on factors that could cause actual results or events to differ materially from those anticipated is included from time to time in our reports filed with the Securities and Exchange Commission, including our Annual Report on Form 10-K (“2020 10-K”) for the year ended December 31, 2020, particularly under Part I, Item 1A - Risk Factors, and in our Quarterly Reports on Form 10-Q. Additionally, new risk factors emerge from time to time and it is not possible for us to predict all such risk factors, or to assess the impact such risk factors might have on our business or sustainability programs and goals. We undertake no obligation to update publicly any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law.

¹ We produce sustainability and environmental, social and governance (ESG) reports aligned with numerous standards, including GRI, the Sustainability Accounting Standards Board (SASB) and the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).

Document References

Throughout this report, we reference publicly available documents, listed and linked below. Throughout this report, page numbers of PDF files refer to the number used by the PDF reader, which does not always match the number shown at the bottom of the page of the target file (e.g. 2020 10-K, 2021 Proxy Statement, etc.).

Investor Relations Website

[2020 10-K](#)

[2021 Proxy Statement](#)

[Code of Business Ethics & Conduct](#)

[Corporate Governance Guidelines](#)

[Human Rights Policy](#)

[Management Development and Compensation Committee Charter](#)

[Nominating and Corporate Governance Committee Charter](#)

[Political Contributions Policy](#)

[Supplier Code of Business Ethics & Conduct](#)

[Sustainability & Corporate Responsibility Committee Charter](#)

Sustainability Website

[2020 Sustainability Report](#)

[2020 SASB Report](#)

[2020 GRI Report \(this report\)](#)

[2020 TCFD Report](#)

[Environmental Policy](#)

[Safety Policy](#)

[2020 Greenhouse Gas Inventory Assurance Statement](#)

GRI 102: General Disclosures

Organizational Profile

Standard	Description	Cross-Reference or Answer
102-1	Name of the organization	Republic Services, Inc.
102-2	Activities, brands, products, and services	Item 1, page 3 2020 10-K
102-3	Location of headquarters	18500 North Allied Way Phoenix, AZ 85054
102-4	Location of operations	Item 1, page 3 2020 10-K
102-5	Ownership and legal form	Cover page 2020 10-K
102-6	Markets served	Item 1: geographic locations, page 3 and types of customers, pages 13-14 2020 10-K
102-7	Scale of the organization	Total Number of Employees: 35,000 employees as of December 31, 2020; Item 1, page 6 2020 10-K . Total Number of Operations: Item 1, page 3 2020 10-K . Net Revenues: \$10,153.6 (in millions). Products or Services Provided: Item 1, pages 12-14 2020 10-K . 2020 SASB Report : IF-WM-000.B, IF-WM-000.C, IF-WM-000.D
102-8	Information on employees and other workers	More than 99% of our workers are full-time employees. This does not include contingent or temporary labor. See Appendix 102-8
102-9	Supply chain	Item 1, pages 4, 7, 12-14 2020 10-K
102-10	Significant changes to the organization and its supply chain	Item 1, pages 3-4 and 9-11; Item 7, pages 33-40; and Item 8, pages 82-83 2020 10-K
102-11	Precautionary Principle or approach	Consistent with the precautionary principle, we advocate a risk-based approach to our operations through our enterprise risk management process, as described in Disclosure 102-30 Effectiveness of risk management processes.
102-12	External initiatives	We leverage the following best practice standards, guidelines and frameworks when developing our own sustainability strategy and associated policies and practices: <ul style="list-style-type: none"> • Global Reporting Initiative (GRI), • UN Sustainable Development Goals (UN SDGs), • Science Based Target initiative (SBTi), • CDP (formerly the Carbon Disclosure Project), • Climate Disclosure Standards Board (CDSB), • Sustainability Accounting Standards Board (SASB), • Task Force on Climate Related Financial Disclosures (TCFD), • International Integrated Reporting Council (IIRC), • International Organization for Standardization (ISO). <p>Republic has also joined several coalitions and committees to impact third-party distracted driving. As the operator of the fifth largest vocational fleet in the country, we play a large part in influencing safe driving practices. See GRI 403 Occupational Health and Safety in this report for more details.</p>

Organizational Profile (Continued)

Standard	Description	Cross-Reference or Answer
102-13	Membership of associations	<p>Republic is a member of the following associations related to our sustainability strategy:</p> <ul style="list-style-type: none"> • Direct Delivery Leadership Council (DDLCL) • Environmental Research and Education Foundation (EREF) • Solid Waste Association of North America (SWANA) • Together for Safer Roads (TSR) • National Association of Manufacturers (NAM) • National Waste & Recycling Association (NWRA) • National Safety Council (NSC) • US Composting Council (USCC) • Several other national, state and local organizations, both governmental and non-governmental

Strategy

Standard	Description	Cross-Reference or Answer
102-14	Statement from senior decision-maker	Page 5, 2020 Sustainability Report – Message from Jon Vander Ark, CEO & President
102-15	Key impacts, risks, and opportunities	Item 1A (pages 18-28) 2020 10-K ; TCFD Report

Ethics and Integrity

Standard	Description	Cross-Reference or Answer
102-16	Values, principles, standards, and norms of behavior	<p>Our Code of Business Ethics & Conduct represents who we are and is the foundation of our shared values and commitment to ethics and compliance. We listen to employee feedback and monitor employee behavior to ensure employee actions foster Republic's ethical culture. Read more about how we encourage a 'speak up' culture that drives ethics and compliance across the enterprise in our 2020 Sustainability Report: Ethics & Compliance.</p> <p>Our Human Rights Policy is one example of our core values in action: "Respectful — We value others and demonstrate that in everything we do. Embedded in this value is the commitment to respect human rights — the fundamental rights, freedoms and standards of treatment to which all people are entitled. We reinforce this commitment by conducting business and making decisions in an ethical and responsible manner and require that our practices never infringe on human rights."</p> <p>Our Supplier Code of Business Ethics & Conduct outlines our environmental, social and ethical expectations of our service partners.</p>
102-17	Mechanisms for advice and concerns about ethics	Code of Business Ethics & Conduct ; 2020 Sustainability Report: Ethics & Compliance

Governance

Standard	Description	Cross-Reference or Answer
102-18	Governance structure	Sustainability & Corporate Responsibility Committee Charter ; pages 13-43 2021 Proxy Statement ; 2020 Sustainability Report: Sustainability Risk Governance & Management
102-19	Delegating authority	Pages 32-33, 35-39 2021 Proxy Statement and Sustainability & Corporate Responsibility Committee Charter
102-20	Executive-level responsibility for economic, environmental, and social topics	Pages 35-39 2021 Proxy Statement ; Sustainability & Corporate Responsibility Committee Charter ; 2020 Sustainability Report: Sustainability Risk Governance & Management
102-21	Consulting stakeholders on economic, environmental, and social topics	Pages 24-26 and 33-34 2021 Proxy Statement ; pages 5, 7 2020 Sustainability Report
102-22	Composition of the highest governance body and its committees	Pages 14, 21-26 2021 Proxy Statement
102-23	Chair of the highest governance body	Page 14 2021 Proxy Statement
102-24	Nominating and selecting the highest governance body	Page 31 2021 Proxy Statement ; Nominating and Corporate Governance Committee Charter
102-25	Conflicts of interest	Code of Business Ethics & Conduct ; Nominating and Corporate Governance Committee Charter ; Corporate Governance Guidelines
102-26	Role of highest governance body in setting purpose, values, and strategy	Sustainability & Corporate Responsibility Committee Charter ; pages 17, 20, 28, 32 2021 Proxy Statement
102-27	Collective knowledge of highest governance body	Pages 21-26 2021 Proxy Statement and Sustainability & Corporate Responsibility Committee Charter
102-28	Evaluating the highest governance body's performance	Corporate Governance Guidelines ; pages 28-29, 38, 42 2021 Proxy Statement
102-29	Identifying and managing economic, environmental, and social impacts	Pages 32-41 2021 Proxy Statement

Governance (Continued)

Standard	Description	Cross-Reference or Answer
102-30	Effectiveness of risk management processes	<p>Sustainability & Corporate Responsibility Committee Charter</p> <p>Enterprise risks and opportunities are managed through our Enterprise Risk Management (ERM) program, which includes involvement of key managers throughout the business, our leadership team and our Board of Directors. For more information about the Board's involvement in risk management, see our 2021 Proxy Statement, pages 32-33, as well as our 2020 TCFD Report, pages 7-9 and 20. The ERM register is populated with risks and opportunities from across the business, including those related to sustainability (environmental, social and governance) topics. Aggregated risks and opportunities are then assessed and prioritized based on their impact to the strategy and enterprise. Finally, the outcome of the ongoing ERM process is provided to the Senior Leadership team as inputs to strategy development and to ensure the resilience of our strategy with respect to long-term value creation objectives. The most significant business risks and opportunities are reported publicly through our annual 2020 10-K.</p> <p>Many topics that impact our business, such as fuel and electricity consumption, emissions from our fleet and emissions from our landfills, are directly linked to the environment and climate change. Many other topics, such as safety, employee engagement and community health, are directly linked to broader social and governance challenges in the communities we serve. The Sustainability function at Republic has a stand-alone process for identifying, quantifying and prioritizing risks and opportunities related to environmental, social and governance topics (see GRI 102-46 and 102-47). This process is unique in that it handles medium to long-term risks and seeks to quantify non-financial risks to help the ERM team and the broader business understand the sustainability risks in the context of the business strategy. Risks identified by this team are combined with those from the broader business function and integrated into the ERM process for assessment, management and monitoring. The effectiveness of the ERM program is represented by the various disclosures and performance results contained in our 10-K, 10-Q and GRI reports.</p>
102-31	Review of economic, environmental, and social topics	Sustainability & Corporate Responsibility Committee Charter ; pages 35-39 2021 Proxy Statement See Appendix 102-47
102-32	Highest governance body's role in sustainability reporting	Sustainability & Corporate Responsibility Committee Charter
102-33	Communicating critical concerns	Sustainability & Corporate Responsibility Committee Charter ; pages 32-33 2021 Proxy Statement See Appendix 102-47
102-34	Nature and total number of critical concerns	GRI 102-15 and 201; Sustainability & Corporate Responsibility Committee Charter See Appendix 102-47
102-35	Remuneration policies	Pages 16-17, 38-39, 65-67 2021 Proxy Statement
102-36	Process for determining remuneration	Management Development and Compensation Committee Charter
102-37	Stakeholders' involvement in remuneration	Page 56 2021 Proxy Statement
102-38	Annual total compensation ratio	Page 84 2021 Proxy Statement
102-39	Percentage increase in annual total compensation ratio	In 2019, the CEO pay ratio was 197-to-1 and in 2020 the CEO pay ratio was 198-to-1, representing an increase of 0.5 percent. See discussion on page 84 of our 2021 Proxy Statement .

Stakeholder Engagement

Standard	Description	Cross-Reference or Answer
102-40	List of stakeholder groups	Our key stakeholders include: <ul style="list-style-type: none"> • Customers (Municipal, Commercial, Residential, Industrial) • Employees • Contractors • Investors • Supply chain partners • Communities • Non-governmental organizations • Governmental organizations • Thought leaders
102-41	Collective bargaining agreements	24% of our active workforce are covered under collective bargaining agreements. 2020 SASB Report : IF-WM-310a.1, IF-WM-310a.2
102-42	Identifying and selecting stakeholders	Stakeholders viewed as strategic partners are those who have a significant interest in and/or impact on areas that are most material to our company.
102-43	Approach to stakeholder engagement	In addition to our periodic sustainability materiality assessment exercises (See GRI 102-46 and 102-47), where we engage key stakeholders, we conduct the following ongoing stakeholder engagement activities with each key stakeholder group: <ul style="list-style-type: none"> • <i>Employees</i>: Employee engagement surveys, an open-door policy and human capital development programs allow us to listen to employees, show them we care and demonstrate our commitment to making Republic a great place to work for everyone. • <i>Customers</i>: We listen to our customers and respond to their needs through dedicated account management teams. We proactively seek input through our sales and customer service channels. Republic participates in industry organizations (see GRI 102-13), and many governmental and non-governmental organizations at national, state and local levels. During our periodic materiality assessments, we solicit feedback and reflection through focused interviews with select customers. • <i>Communities, Municipalities and Organizations</i>: We're committed to each community we serve. Partnerships with municipalities allow us to serve the interests of those communities. We actively engage with a selection of municipalities and non-governmental organizations (NGOs) during our periodic materiality assessments. These engagements may develop into partnerships where interests align. • <i>Investment Community</i>: We have developed a broad shareholder engagement program that provides us with valuable insight and feedback from shareholders throughout the year. During 2020, we engaged directly with shareholders representing approximately 52% of shares outstanding as well as one proxy advisor. Feedback we receive is shared with the Board to be incorporated in their decision-making. • <i>Supply Chain Partners</i>: We engage with our supply chain partners both downstream and upstream from our company to help us to better understand risks and opportunities to us and our stakeholders.
102-44	Key topics and concerns raised	In addition to what is mentioned GRI 102-47, our priority sustainability topics are heavily influenced by the perspectives of our key stakeholders.

Reporting Practices

Standard	Description	Cross-Reference or Answer
102-45	Entities included in the consolidated financial statements	Exhibit 21.1 (pages 202-216) 2020 10-K
102-46	Defining report content and topic Boundaries	<p>The topics of focus are established based on a strategic assessment of sustainability issues across our business strategy, their relevance to stakeholders and the ability to positively impact the communities we serve. These focus areas are developed and refined through our materiality assessment and ongoing engagement and consultation with our employees and key external stakeholders (e.g. customers and investors) and affirmed by our Board.</p> <p>Republic completed materiality assessments in 2014 and 2018, with another planned for the second half of 2021. Between formal assessments, Republic evaluates its most relevant sustainability issues through the ongoing engagement of internal and external stakeholders against sustainability mega-trends.</p> <p>Our formal sustainability-specific materiality assessment aims to:</p> <ul style="list-style-type: none"> • Gather input on drivers of sustainability risks and opportunities across our business • Evaluate the nature of impacts and our ability to affect those directly and indirectly • Provide context and review prioritized drivers for transparency and disclosure • Identify gaps in our risk and opportunity assessment • Suggest actions to enhance management systems and improve transparency <p>Our materiality assessment process includes issue identification, stakeholder mapping, prioritization of sustainability issues and final analysis, resulting in our materiality map. The topics identified and prioritized through our formal materiality assessment process make up the foundation of our sustainability program, described in our 2020 Sustainability Report.</p> <p>See Appendix 102-47</p>
102-47	List of relevant sustainability topics	See Appendix 102-47
102-48	Restatements of information	This 2020 GRI Report reflects the following restatements. Adjustments to our environmental data made in 2019 are outlined in GRI 102-48 of our 2019 GRI Report . GRI 405-1 notes an update to female share of Board of Directors. Scope 1 emissions for 2017-2020 in GRI 305-1, GRI 305-4, and GRI 305-5 now account for the operation of our corporate jet, calculated using the EPA GHG Emissions Factor Hub for Jet Fuel.
102-49	Changes in reporting	We continue to enhance our reporting and disclosure each year as expectations increase. We regularly update our reporting methodology as specific standards get updated. We had no significant changes to the list of material topics or their boundaries in 2020.
102-50	Reporting period	2020 calendar year unless otherwise stated
102-51	Date of most recent report	Our most recent, previous GRI Report was published in July 2020.
102-52	Reporting cycle	We issue our GRI report, SASB report and our comprehensive Sustainability Report on an annual basis. In 2021, we released our first TCFD report, which we also intend to update annually.
102-53	Contact point for questions regarding the report	Sustainability@RepublicServices.com

Reporting Practices (Continued)

Standard	Description	Cross-Reference or Answer
102-54	Claims of reporting in accordance with the GRI Standards	This report has been prepared in accordance with the GRI Standards: Core option .
102-55	GRI content index	Republic Services 2020 GRI Report (this PDF).
102-56	External assurance	Republic has completed a third-party verification of its publicly reported 2013 through 2020 Scope 1, 2 and 3 (Business Travel and third-party/subcontractor hauling only) GHG (greenhouse gas) emissions in accordance with the ISO 14064-3 Standard. The assurance statement is available on our Sustainability website . Republic has not sought external assurance of this GRI Report or its 2020 Sustainability Report .

GRI 200: Economic Topics

GRI 201: Economic Performance [2016]

Standard	Description	Cross-Reference or Answer
103-1,2,3	Management approach	Item 7 (page 32) 2020 10-K ; pages 5-6, 27-34, 2021 Proxy Statement
201-2	Financial implications and other risks and opportunities due to climate change	Climate change risks and impacts to Republic: pages 16, 18-19, 21-23 2020 10-K . Methods used to manage these risks: pages 16, 18-19, 21-23 2020 10-K , pages 30-31 and 33 2021 Proxy Statement and GRI 102-30 . Refer also to our 2020 TCFD Report and our annual CDP response for more detailed information on climate change risks, opportunities, implications and management approach at Cdp.net .
201-3	Defined benefit plan obligations and other retirement plans	Pages 97-104 2020 10-K

GRI 205: Anti-Corruption [2016]

Standard	Description	Cross-Reference or Answer
103-1,2,3	Management approach	<p>Republic's values and priorities reflect our ongoing commitment to legal and regulatory compliance, integrity and business ethics at every level within our organization. We have worked diligently to maintain a culture that values teamwork, trust and integrity with an unwavering commitment to uphold the highest ethical standards in our business practices. Our dedication to maintain a strong ethical culture, while always choosing to do the right thing for our people, customers, shareholders, communities and environment, are foundational to our values and represent the highest standards of integrity and excellence we have set for every Republic employee and extended to our industry.</p> <p><i>Coverage</i> The company's anti-corruption indicators apply to our employees, Board of Directors, independent contractors, consultants and other third parties when acting on behalf of the Company, as defined in our Code of Business Ethics & Conduct (the "Code"). Coverage is applicable to all services provided.</p> <p><i>Approach</i> The Code exemplifies our values and is the cornerstone to sustaining a strong ethical culture. We continue to monitor employee feedback and behaviors to ensure we take all necessary actions to foster and elevate Republic's ethical culture and ethics and compliance program. This includes raising concerns about potential violations of the Code and related policies. The Republic AWARE Line is available for all employees to raise concerns anonymously, without fear of retaliation. A full description is available within the Code.</p> <p>We do not permit retaliation or intimidation against anyone who reports a concern, raises a compliance question, seeks advice or cooperates in an investigation. Anyone who retaliates or attempts to retaliate will be subject to disciplinary action, up to and including termination of employment.</p>

GRI 205: Anti-Corruption [2016] (Continued)

Standard	Description	Cross-Reference or Answer
205-2	Communication and training about anti-corruption policies and procedures	All employees are trained on the Code. This training is reaffirmed every year with company-wide communication, quizzes and/or other measures to ensure employees are acting with the Code in mind. One related action was the distribution of Ethical Decision-Making Wallet Cards to each employee.
205-3	Confirmed incidents of corruption and actions taken	For the reporting year 2020, we did not have any material violations or breaches of our Code of Business Ethics & Conduct .

GRI 300: Environmental Topics

GRI 302: Energy [2016]

Standard	Description	Cross-Reference or Answer
103-1,2,3	Management approach	<p>Our Environmental Policy guides our commitment and efforts to continuously improve our environmental performance and reduce our impacts. The greatest use of energy at Republic lies within our use of transportation fuel. We have approximately 26,000 vehicles and equipment, including recycling and waste collection vehicles, heavy equipment used at our facilities to move and manage waste, and support vehicles, all used in the service of our customers across the country. Our collection and support vehicles consume the largest share of energy within our fleet.</p> <p>A primary focus area is on reducing diesel fuel use in our vehicle fleet. We have several initiatives that have resulted in a decrease in energy intensity for our recycling and waste collection operations (see Appendix - 302-3 Energy Intensity).</p> <p>Fleet automation: Approximately 77% of our residential routes have been converted to automated single-driver trucks. These trucks can complete a route faster, with less idling time, not only reducing fuel use and associated emissions, but also reducing labor costs, improving driver productivity and creating a safer work environment. Additionally, communities using automated vehicles have higher participation rates in recycling programs, thereby complementing our initiative to expand our recycling capabilities.</p> <p>Standardized maintenance: OneFleet, our standardized vehicle maintenance program, enables us to use best practices for fleet management, truck care and maintenance. Through standardization of core functions, we can reduce our fuel use and minimize variability in our maintenance processes, resulting in higher vehicle quality and a lower environmental footprint, while extending the average service life of our fleet. Operating a cleaner, more reliable, safer and more efficient fleet will lower our operating costs.</p> <p>Advanced route planning technology: We continue to advance our route planning technology for the betterment of our drivers and environment, including the implementation of our own RISE platform.</p> <p>Calculating smart and efficient travel plans decreases fuel consumption, vehicular emissions and travel time.</p> <p>Fleet transition: We have transitioned 21% of our fleet to natural gas vehicles, a bridge fuel on the path toward fleet electrification. We are growing capacity to fuel these vehicles, with 38 fueling stations as of December 31, 2020. Once we transition to electric, we will gain the efficiency benefits over diesel, enabling our fleet to travel more miles for the same unit of energy (see Appendix - 302-4 Reduction of energy consumption).</p>
302-1	Energy consumption within the organization	See Appendix - 302-1 2020 SASB Report : IF-WM-110b.1
302-2	Energy consumption outside of the organization	See Appendix - 302-2
302-3	Energy intensity	See Appendix - 302-3
302-4	Reduction of energy consumption	See Appendix - 302-4 2020 SASB Report : IF-WM-110b.2

GRI 303: Water and Effluents [2018]

Standard	Description	Cross-Reference or Answer
103-1,2,3	Management approach	<p>Today our management of water usage is site-specific. We are exploring ways to aggregate our approach to water for company-wide reporting.</p> <p>The primary effluent across our operations (namely at active and closed landfills) is leachate, a by-product of waste decomposing in landfills. Leachate is any liquid that has passed through or come from waste in a landfill. Republic is dedicated to doing what we can to protect the watersheds within our communities. This means thoughtfully and responsibly designing leachate collection systems at each of our sites, and adding pretreatment systems, where beneficial. In addition, by removing liquids from within a landfill, site operators can improve the efficiency of landfill gas extraction wells and other interrelated operating systems. Our leachate collection systems collect and process liquids to ensure that our landfills have minimum impact on watershed regeneration. Our comprehensive leachate management plans govern the ways in which we collect leachate and protect the surrounding environment.</p> <p>In addition to our collection systems, we operate numerous pretreatment facilities across the country. Upon removal from the landfill, liquids are oftentimes routed to an on-site pretreatment facility to eliminate or reduce certain constituents. Once the pretreatment process is complete, liquids are typically discharged or transported to municipal treatment facilities, much like everyday wastewater. The most common form of pretreatment is aeration. This process involves introducing air into the liquids to accelerate the elimination or reduction of constituents. Two other techniques include chemical precipitation, which adjusts the water chemistry to remove constituents, or advanced biological treatment, which uses microorganisms to consume constituents in liquids. At select landfills, we have even eliminated our liquids disposal through two unique techniques: phytoremediation, which uses green plants to absorb liquids, and evaporative treatments, which involve applying heat to vaporize liquids as steam.</p> <p>Environmental Policy</p>
303-1	Interactions with water as a shared resource	<p>Republic uses water to control dust at our landfills, clean our vehicles and machinery, and clean up contaminants. Our water is primarily drawn from municipal sources.</p> <p>We closely monitor the transfer of water into our landfills through leachate collection systems and purification processes.</p> <p>We utilize GIS tools to understand where our facilities are located, how their operations interact with water scarcity and drought, and where water quality and availability may be at risk as the result of natural disasters such as floods or hurricanes.</p> <p>We are constrained by our operational geographies, which limit our ability to fully address water-related impacts. However, we make efforts to mitigate risks through water conservation strategies and management techniques.</p>
303-2	Management of water discharge-related impacts	<p>Republic follows all federal, state and local requirements around the discharge of effluent, which includes leachate. These standards include guidelines set forth in the Clean Water Act among others. Republic reviews water scarcity and rainfall in the regions where we operate. Due to the geographic constraints of our operations, we are somewhat beholden to our municipal providers to source water responsibly.</p>
303-4	Water discharge	SASB Report : IF-WM-150a.1, RSG-ML-02

GRI 305: Emissions [2016]

Standard	Description	Cross-Reference or Answer
103-1,2,3	Management approach	<p>Our Environmental Policy guides our commitment and efforts to continuously improve our environmental performance and reduce our impacts. We are committed to pollution prevention, and we were the first in the industry to set a science-based GHG emissions reduction target to ensure that we're doing our part to combat global warming. From landfills and vehicles to equipment and buildings, we use our assets to provide essential and valuable services to thousands of communities. Our scale and strength put us in a unique position to provide safe, responsible recycling and waste disposal services while protecting the planet and our communities.</p> <p>Landfill methane emissions, vehicle and equipment emissions, and building electricity all contribute to climate change. That's why we've adopted an aggressive target for reducing our operational GHG emissions, aligned with the Science Based Targets initiative (SBTi): Reduce absolute Scope 1 and 2 greenhouse gas emissions 35% by 2030 (2017 baseline year). Our emissions breakdown is 79% Scope 1, 1% Scope 2, and 19% Scope 3, with most of our emissions coming from our landfills and fleet. We've outlined some of the pathways that will drive our reductions.</p> <p>Reducing Emissions Through Landfill Innovation: Our modern landfills are complex, highly controlled biological systems. Our engineers design these structurally stable facilities to ensure we maximize the decomposition of waste in a manner that manages byproducts and minimizes impact to the environment today and for years to come. Highly efficient landfills such as ours collect most of the would-be fugitive greenhouse gas emissions for beneficial reuse or processing, turning an impact into an opportunity. When beneficial reuse of landfill gas is not an option, we thermally destruct gas on-site, safely destroying harmful pollutants while significantly reducing greenhouse gas emissions. We continue to explore new technology and operating practices.</p> <p>Reducing Fleet Emissions: Approximately 21% of our fleet operates on natural gas, a bridge fuel until electric vehicles are commercially viable. Beginning in 2020, 100% of the natural gas used to power the natural gas vehicles in our fleet is renewable natural gas (RNG), a low greenhouse gas emission fuel, sourced from the recovery of fugitive emissions. Vehicles running on RNG provide us a competitive advantage in communities with strict emission standards, since these fuels are cleaner and less carbon-intensive.</p> <p>We have established multiple partnerships with battery and electric truck manufacturers to operate a fully electric fleet to help us achieve our ambitious emissions goal. The benefits of fully electric trucks are plentiful: dramatically reduced carbon emissions, lower maintenance, regenerative braking, reduced noise and fewer overall impacts in the communities we serve. In 2020, as part of a pilot program through a partnership with Mack Trucks, we began using an all-electric collection vehicle.</p> <p>Reducing Emissions When We Build: Our commitment to sustainable practices extends throughout our operations and into our facilities. Our new building construction and retrofits are guided by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) standards. These include using energy reduction and water conservation measures and the use of sustainable materials and design principles that enhance comfort.</p> <p>Positive Impacts of Climate Leadership: There is no doubt our projects and plans will evolve over the next decade, as we learn more about the environment and leverage new technology and data. We will be monitoring and measuring several advancements related to our Climate Leadership goal and sharing results in future reports. Benefits of our goals include reduced operating costs; minimized risks to our physical assets; moderated impact of fuel-price volatility or future carbon tax; and attraction of customers in a low-carbon economy.</p>

Continued on following page

GRI 305: Emissions [2016] (Continued)

Standard	Description	Cross-Reference or Answer
103-1,2,3 <i>Continued</i>	Management approach	Progress on our science-based target and other goals is reported publicly and updated annually in our Sustainability, GRI, SASB and TCFD Reports. 2020 Sustainability Report: Climate Leadership 2020 TCFD Report
305-1	Direct (Scope 1) GHG emissions	See Appendix – 305-1 2020 Sustainability Report: Climate Leadership 2020 SASB Report: IF-WM-110a.1
305-2	Energy indirect (Scope 2) GHG emissions	See Appendix – 305-2 2020 Sustainability Report: Climate Leadership
305-3	Other indirect (Scope 3) GHG emissions	See Appendix – 305-3
305-4	GHG emissions intensity	See Appendix – 305-4
305-5	Reduction of GHG emissions	See Appendix – 305-5 2020 SASB Report: IF-WM-110a.3 2020 Sustainability Report: Climate Leadership
305-7	Nitrogen oxides (NO _x), sulfur oxides (SO _x), and other significant air emissions	See Appendix – 305-7 2020 SASB Report: IF-WM-120a.1

GRI 306: Waste [2020]

General Disclosures	Description	Cross-Reference or Answer
103-1,2,3	Management approach	<p>Republic is one of the largest providers of recycling and waste services in the United States. As of December 31, 2020, we operated facilities in 41 states through 345 collection operations, 220 transfer stations, 186 active landfills, 76 recycling processing centers, 6 treatment, recovery and disposal facilities, 9 salt water disposal wells and 7 deep injection wells. We were engaged in 75 landfill gas-to-energy and renewable energy projects and had post-closure responsibility for 128 closed landfills.</p> <p>Since the management of recycling and waste is our principle source of revenue, we have extensive management structures in place. These structures oversee every aspect of our activities, including fleet procurement, collection of household and business recycling and waste, sale of goods to reuse markets and responsible landfill management. Please read more about our management of these activities in our 2020 10-K and throughout our 2020 Sustainability Report. We evaluate our management of these topics through performance targets throughout the organization, acknowledging that successful oversight of recycling and waste is a key driver to the success of our organization.</p> <p>Our Environmental Policy describes our approach to recycling and waste. In the context of our recycling and waste collection business, the volume of recycling and waste produced by our own operations is insignificant.</p>

GRI 306: Waste [2020] (Continued)

Standard	Description	Cross-Reference or Answer												
306-1	Waste generation and significant waste-related impacts	Our waste-related activities are described in Item 1 and associated risk factors are listed in Item 1A of our 2020 10-K .												
306-2	Management of significant waste-related impacts	Our management of waste-related activities is described in Item 1 and throughout our 2020 10-K . These are also described throughout our 2020 Sustainability Report , especially in the Climate Leadership section.												
		Our 2030 goals on Circular Economy and Renewable Energy exemplify our commitment to reduce waste. Progress toward those goals is listed below. Read more about those goals and how we're working to achieve them in our 2020 Sustainability Report: Climate Leadership .												
		<table border="1"> <thead> <tr> <th>Increase recovery of key materials by 40% on a combined basis by 2030 (2017 baseline year)</th> <th>2017</th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2030 Goal</th> </tr> </thead> <tbody> <tr> <td>Key materials recovered (tons)</td> <td>4,393,250</td> <td>4,342,762</td> <td>4,501,706</td> <td>4,613,846</td> <td>6,150,549</td> </tr> </tbody> </table>	Increase recovery of key materials by 40% on a combined basis by 2030 (2017 baseline year)	2017	2018	2019	2020	2030 Goal	Key materials recovered (tons)	4,393,250	4,342,762	4,501,706	4,613,846	6,150,549
		Increase recovery of key materials by 40% on a combined basis by 2030 (2017 baseline year)	2017	2018	2019	2020	2030 Goal							
Key materials recovered (tons)	4,393,250	4,342,762	4,501,706	4,613,846	6,150,549									
<table border="1"> <thead> <tr> <th>Increase biogas sent to beneficial reuse by 50% by 2030 (2017 baseline year)</th> <th>2017</th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2030 Goal</th> </tr> </thead> <tbody> <tr> <td>Beneficial biogas reuse (billion scf)</td> <td>73.6</td> <td>71.5</td> <td>74.9</td> <td>72.3</td> <td>110.4</td> </tr> </tbody> </table>	Increase biogas sent to beneficial reuse by 50% by 2030 (2017 baseline year)	2017	2018	2019	2020	2030 Goal	Beneficial biogas reuse (billion scf)	73.6	71.5	74.9	72.3	110.4		
Increase biogas sent to beneficial reuse by 50% by 2030 (2017 baseline year)	2017	2018	2019	2020	2030 Goal									
Beneficial biogas reuse (billion scf)	73.6	71.5	74.9	72.3	110.4									
306-4	Waste diverted from disposal	<p>In 2020, we managed 106 MT (million tons) of materials and diverted 7.6 MT of materials from landfills, leading to an overall diversion rate of 7.2%. We processed 5.6 MT of those volumes for diversion in our own materials recovery facilities.</p> <p>2020 SASB Report: IF-WM-000.D, IF-WM-420a.3, IF-WM-420a.4 [Converted to metric tons]</p>												

GRI 307: Environmental Compliance [2016]

Standard	Description	Cross-Reference or Answer
103-1,2,3	Management approach	<p>Republic exercises the utmost responsibility in our operations. This includes our fleet, our buildings, our landfill technology and the day-to-day activities we conduct in the community. We are working hard to understand and measure our impact to the air, water and land to minimize or eliminate any negative consequences, where possible.</p> <p>Given the nature of our business, it is essential for us to be in compliance with environmental laws and regulations. Non-compliance can put the environment at risk, as well as our employees, our customers, the communities we serve and our brand. We are driven to comply with applicable laws, regulations and permits. Our facilities and operations are subject to a variety of federal, state and local regulations that regulate, among other things, the environment, public health, safety, zoning and land use.</p> <p>Republic leverages an environmental management system (EMS) to ensure compliance, which has been in place for many years. Our EMS is overseen by the Vice President, Engineering & Environmental Compliance, reporting to our SVP Operations Support. The Vice President, Engineering & Environmental Compliance sits on the Ethics and Compliance Committee. The Director, Environmental Compliance has a dotted line reporting matrix to the Executive Vice President, Chief Legal Officer, Chief Ethics & Compliance Officer and Corporate Secretary. The Engineering & Environmental Compliance team oversees environmental compliance, engineering and environmental management. We maintained an ISO 14001 certification at our Charlotte, NC Recycling Facility throughout the 2020 reporting year, which is available on our sustainability website.</p> <p>The EMS is managed under the Corporate Environmental Compliance Policy and is implemented in the field through Republic operations with the oversight of our Corporate team. The field teams are staffed with a Director of Engineering Field Operations, who provides support to the Area and local division engineering and environmental management activities. The Company is organized into 11 Areas, each with an Area Environmental Manager that oversees multiple Environmental Managers responsible for the implementation of the items described in the Corporate Environmental Compliance Policy. Environmental Managers also manage the services of multiple Environmental Specialists and Environmental Technicians within each Area.</p> <p>The Corporate Legal Department with the support of Corporate Environmental Compliance is responsible for documenting, storing and tracking all environmental enforcement issues including inspections, Notices of Violations, Letters of Warning and other information related to environmental compliance with federal, state and local regulations. Operations Management is responsible for ensuring that all employees, contractors, vendors, and visitors to our facilities actively comply with our policies. Managers are also required to timely report, manage and resolve all environmental enforcement violations. Given its importance, we have established Absolutes and Standards around environmental compliance. Our Absolutes and Standards are non-negotiable. They support a culture of consistency and policy compliance and further strengthen our EMS program.</p> <p>Our EMS program consists of several policies, manuals, standard operating procedures, reporting forms and tracking databases to ensure compliance with the Company's policy. Key pieces of our EMS program are listed below.</p> <p style="text-align: right;"><i>Continued on following page</i></p>

GRI 307: Environmental Compliance [2016] (Continued)

Standard	Description	Cross-Reference or Answer
103-1,2,3	Management approach	<p>Corporate Environmental Compliance Policy: As mentioned above, this is the overarching policy for our EMS. Third-party facility approval and request processes are also part of this policy. Republic guidelines require the use of approval procedures that must be followed for all agreements involving the use of non-Republic disposal, transfer station and recycling sites. The use of the Republic Third Party Facility request form is required to initiate this process.</p> <p>Landfill Air Compliance Program Standard: The purpose of the Standard is to provide guidance and a consistent approach regarding air compliance services performed for Republic. This document is used by the company's Engineering and Environmental Management team and related third-party consultants - i.e., all personnel are responsible for conducting air compliance services and supporting such activity at Republic landfills.</p> <p>Landfill and Transfer Station Operating Standard and Best Practices User Guide: The Standards Manuals are designed to provide practical and comprehensive information to understand the operating standards of all Republic active landfills and transfer stations. The guides contain field-tested best practices describing policies and procedures that guide facility managers on how to comply with the standard.</p> <p>Procurement Policy: Republic has a centralized procurement team to manage and guide the company's procurement efforts. Their policy is to provide professional procurement and supply chain management services through effective teamwork and communication with stakeholders and suppliers and by sourcing goods and services that meet the Company's needs at the highest quality and the lowest total cost.</p> <p>Special Waste Management Policy: Republic has in place a Special Waste Management Policy to meet all applicable federal requirements under the Resource Conservation and Recovery Act and implementing regulations (40 CFR Part 261) and the Toxic Substance Control Act and implementing regulations for polychlorinated biphenyl waste (40 CFR Part 761), along with any applicable state or permit requirements to prevent the acceptance of wastes not eligible for management at Republic landfills. For those wastes that are deemed acceptable, additional SOPs (e.g. Liquid Waste Solidification, Treated Medical Waste and Radiation Monitoring) have been developed to help facilitate the proper handling, transportation and disposal of Special Wastes managed by the Company.</p> <p>Engineering Policy: This policy establishes guidelines for Corporate and Field personnel on the procedures for using the landfill and environmental budget model, project management practices and environmental due diligence. It also includes landfill gas, leachate management and air compliance SOPs. Due diligence, M&A and business development are also addressed.</p> <p>Each year, we participate in independent auditing at a cross-section of facilities, covering roughly 10% of our landfills. CHWMEG, Inc., a nonprofit trade association comprised of manufacturing and other "industrial" companies interested in efficiently managing the waste management aspects of their environmental stewardship programs, conducts these audits. One aspect of CHWMEG, Inc. includes conducting comprehensive, independent reviews of commercial facilities that treat, store, dispose of, recycle or transport waste. The facilities included in the facility review program are selected by CHWMEG members. The evaluations are performed according to a standard protocol by independent and experienced environmental firms under contract to CHWMEG, Inc. The cost of the facility review reports is shared by the member companies.</p>

Continued on following page

GRI 307: Environmental Compliance [2016] (Continued)

Standard	Description	Cross-Reference or Answer
103-1,2,3 Continued	Management approach	<p>We also provide standard checklists and review questionnaires for our safety, operations and compliance teams to use while visiting sites. These assessment templates provide a standardized framework for self-evaluation of facility performance in the applicable EH&S focus areas.</p> <p>Our Internal Audit function conducts additional reviews of environmental issues, including but not limited to our Stormwater Pollution Prevention Plan, levels of leachate on the liners at our landfills (a US EPA requirement), etc.</p> <p><i>Certifications</i> Republic's Energy Services operates businesses serving the oil and gas production industry. Some of the materials hauled have the potential of being defined as DOT hazardous; therefore, all field operations are required to train and maintain HM-181 training records for drivers that haul hazardous materials in accordance with 49 CFR 172.704. Within this Area, 100% of field operations personnel are trained in accordance with 29 CFR 1910.1200, Hazard Communication requirements.</p> <p><i>Evaluation</i> The Sustainability and Corporate Responsibility Committee was formed on April 22, 2015. Per the Charter of this Committee: The Sustainability and Corporate Responsibility Committee (the "Committee") is appointed by the Board of Directors (the "Board") to assist the Board in fulfilling its oversight responsibility and to act in an advisory capacity to the Company's management with respect to significant issues, strategic goals, objectives, policies and practices that pertain to (i) Republic's sustainability performance; (ii) Republic's corporate responsibilities that are of significance to the Company and its role as a socially responsible organization; and (iii) enterprise and other risks and opportunities, including cyber security, climate change, safety, environmental and reputational risks and opportunities, facing the Company and the practices by which these risks are managed and mitigated.</p>
307-1	Non-compliance with environmental laws and regulations	<p>Air and odors 2020 SASB Report: IF-WM-120a.3, RSG-AQ-01</p> <p>Leachate, water and hazardous waste 2020 SASB Report: IF-WM-150a.3, RSG-ML-01</p>

GRI 400: Social Topics

GRI 401: Employment [2016]

Standard	Description	Cross-Reference or Answer																																														
103-1,2,3	Management approach	<p>Our Human Rights policy and our values form the foundation of the culture we've created at Republic. Based on this foundation, we offer numerous programs to develop and enhance employee engagement, from recruiting to ultimate fulfillment of each team member's professional goals and aspirations.</p> <p>The workforce is changing, and we embrace these changes. The number of drivers available to meet demand is falling, and the American Trucking Association projects a shortage of 174,000 drivers in the U.S. by 2026.² Given the relatively high average age of truckers today, this potential shortage makes our engagement goals even more important for long-term success as our Company grows.</p> <p>We value our employees for their diverse ideas, experiences and backgrounds. They help drive our business and make everything we do for each other, our customers and our communities possible. As we work to combine meaningful experiences and programs that develop and motivate employees with competitive compensation and benefits packages, we're building a company where the best people want to work and are engaged every day.</p> <p>Read more about our management approach in the Human Capital section of our 2020 Sustainability Report, which details our 2030 employee engagement goal and records annual progress. Research shows that companies that score in the top 25% in engagement realize a 41% reduction in absenteeism. In addition, highly engaged business units see 59% less turnover.³ Perhaps even more important is that engaged employees are paying attention, and they're passionate about their work, their customers and each other. At Republic, Business Units with higher engagement have better safety records, fewer missed pickups, better environmental performance and are more likely to meet our strategic business objectives. Our work on employee training and education (GRI 404), inclusion and diversity (GRI 405) and many of the programs described in our Sustainability Report help drive our leading performance on employee engagement.</p> <p>Hiring the best people is crucial to delivering shareholder value, but it's more than just a good business strategy. It's fundamental to who we are. Our employees bring our long-term company values to life, setting Republic apart from the competition. We believe that by achieving our engaged workforce goal, we will improve our safety record and operating performance; strengthen our customer relationships; and reduce costs related to turnover.</p>																																														
401-1	New employee hires and employee turnover	<table border="1"> <thead> <tr> <th>Employee engagement scores</th> <th>2015</th> <th>2016</th> <th>2017</th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2030 Goal</th> </tr> </thead> <tbody> <tr> <td>Company-wide</td> <td>82%</td> <td>88%</td> <td>86%</td> <td>85%</td> <td>86%</td> <td>85%</td> <td>88%</td> </tr> <tr> <td>Ethnically diverse</td> <td></td> <td></td> <td></td> <td></td> <td>88%</td> <td>87%</td> <td></td> </tr> <tr> <td>Female</td> <td></td> <td></td> <td></td> <td></td> <td>85%</td> <td>86%</td> <td></td> </tr> <tr> <td>Male</td> <td></td> <td></td> <td></td> <td></td> <td>86%</td> <td>85%</td> <td></td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Turnover rates</th> <th>2019</th> <th>2020</th> </tr> </thead> <tbody> <tr> <td>Driver and technician turnover</td> <td>18.6%</td> <td>16.3%</td> </tr> </tbody> </table> <p>We report on turnover amongst drivers and technicians as part of our management of these two large employee groups, which are critical to our business operations.</p>	Employee engagement scores	2015	2016	2017	2018	2019	2020	2030 Goal	Company-wide	82%	88%	86%	85%	86%	85%	88%	Ethnically diverse					88%	87%		Female					85%	86%		Male					86%	85%		Turnover rates	2019	2020	Driver and technician turnover	18.6%	16.3%
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² <https://www.trucking.org/news-insights/new-report-says-national-shortage-truck-drivers-reach-50000-year>

³ <https://www.gallup.com/workplace/231602/right-culture-not-employee-satisfaction.aspx>

GRI 403: Occupational Health and Safety [2018]

Standard	Description	Cross-Reference or Answer
103-1,2,3	Management approach	<p>Republic is guided by our overarching Safety Policy and comprehensive safety management program, which require us to put safety into everything we do. We've set aggressive goals to ensure that we keep safety top of mind.</p> <p>No job is so urgent that we cannot take the time to do it safely. The success of our safety program is directly dependent on our people: employees with strong operational know-how, attention to detail and a consistent focus. Republic's drivers, operators, technicians and other employees make up a large portion of our total company workforce — and well over half of our employee population is on the road each day.</p> <p>Republic participates in the National Waste and Recycling Association Driver of the Year Award, a means to achieve public recognition within the industry for safe driving. We're proud to say that Republic has won 70% of the Driver of the Year Winners in the large truck category since 2009. For the last two years, we've won Operator of the Year.</p> <p>Since 2018, our Safety Amplified program and public safety goals have driven our efforts to enhance safety for our employees and the communities we serve. Read more about those goals and our progress in our 2020 Sustainability Report: Safety.</p> <p>Our Safety Amplified goals help us deliver additional positive impacts for our Company and stakeholders.</p> <ul style="list-style-type: none"> • Help preserve our license to operate in our communities • Enhance customer trust • Streamline operational processes and increase productivity • Deliver a reputational advantage, including positioning our Company as an employer of choice • Build and sustain a safety culture in all areas of business • Contribute to employee engagement <p>Our Safety Amplified initiatives have been developed to continually improve our safety record and reduce incidents. Occupational Safety & Health Administration's (OSHA) Total Recordable Incident Rate (TRIR) is best-in-class, and we hold ourselves accountable to this metric. We're working with equipment manufacturers to incorporate safety elements such as seatbelt alarms, blind spot awareness, lane departure alarms and other potentially life-saving equipment in our fleet. Continual training, multifaceted programs and strategic partnerships are the key components of our Safety Amplified platform, which is simple by design and comprised of actions and activities that ensure safety is embedded in all we do.</p> <p>Six elements make up the Safety Amplified platform. Focus Together gives foundational safety training to prevent crashes and injuries using Line of Business-specific materials, life-changing events and hands-on skills practices. Lead Together brings best-in-class communication channels to our employees and includes communications training for all supervisors and managers. We Partner Together, collaborating with other departments to provide a detailed holistic approach to site visits with increased executive exposure. We Innovate Together by proactively using technology and data to prevent crashes in the changing environments where we work. When we Analyze Together, we identify trends for better decision-making and opportunities for growth. We Celebrate Together, recognizing positive impacts and achievements by tracking Safe Days and sharing proven best practices.</p> <p>2020 Sustainability Report: Safety</p>

GRI 403: Occupational Health and Safety [2018] (Continued)

Standard	Description	Cross-Reference or Answer						
403-1	Occupational health and safety management system	<p>a. Safety Amplified, our comprehensive health and safety management system, is described above. Our commitment to safety begins with our overarching Safety Policy and includes underlying policies, procedures, manuals and expectations. DOT drivers and other employees in safety-sensitive roles receive a physical copy of our own Safe Actions for Excellence (SAFE) Book, which they must read and sign an acknowledgment that they understand its contents. Employees in safety-sensitive roles are also offered incentives tied to safety metrics.</p> <p>Republic has a professional staff of corporate and field safety professionals. The primary function of the staff is to create a culture of safety, improve overall safety performance, direct field safety activity, facilitate OSHA, Environmental and Department of Transportation matters, and provide statistics for performance standards to company goals. Field Safety Staff include: 11 Area Safety Managers; 9 Business Unit Level Safety Managers; and 11 Safety Representatives. Corporate Safety Staff include: Vice President, Safety (reports to the Chief Operating Officer); Director, Safety; Sr. Manager, Safety; Manager, Safety; Sr. Safety Analyst; and 4 Safety Training Managers.</p> <p>Safety is at the top of Our Priorities statement (refer to our Code of Business Ethics & Conduct) and Republic's Chief Operating Officer is responsible for ensuring our policies, practices and procedures are top of mind for every employee. Executive management is involved in leading safety throughout the organization and includes safety in Board meetings, Corporate management meetings, Area management meetings and Division management meetings. Additionally, the Corporate Risk Management Department meets periodically with the Safety Department to discuss safety programs and initiatives.</p> <p>Safety Amplified builds on OSHA safety and health management program guidelines and recommended practices to bring safety at Republic beyond regulatory requirements.</p> <p>b. The scope of Safety Amplified includes all employees of Republic, at Republic-owned and -operated facilities, for all company activities described in our 2020 10-K. In addition, any contractor or third-party conducting business at our facilities is included in the scope of Safety Amplified.</p> <p>2020 Sustainability Report: Safety</p>						
403-2	Hazard identification, risk assessment, and incident investigation	<table border="1"> <thead> <tr> <th>Assessment</th> <th>Completed in 2019</th> <th>Completed in 2020</th> </tr> </thead> <tbody> <tr> <td>Our annual risk assessment identifies priority divisions, which are audited for safe work practices.</td> <td>30 divisions</td> <td>30 divisions*</td> </tr> </tbody> </table> <p>Each division also completes an annual self-assessment and/or an annual safety site visit and assessment. *Audits performed remotely due to COVID.</p>	Assessment	Completed in 2019	Completed in 2020	Our annual risk assessment identifies priority divisions, which are audited for safe work practices.	30 divisions	30 divisions*
Assessment	Completed in 2019	Completed in 2020						
Our annual risk assessment identifies priority divisions, which are audited for safe work practices.	30 divisions	30 divisions*						

GRI 403: Occupational Health and Safety [2018] (Continued)

Standard	Description	Cross-Reference or Answer								
403-5	Worker training on occupational health and safety	Type of Safety Training			Number Trained - 2019			Number Trained - 2020		
		New drivers, at our Driver Training Centers			3,166 drivers			2,689 drivers		
		Annual defensive driver training			16,292 drivers; 1,412 managers			2,796 drivers*; 408 managers*		
		<p>Contingent employees also received safety training at time of assignment in 2020 and then twice per month for the remainder of the assignment. Third-party contractors working on our sites receive initial site-specific safety rules training and then again if any site rules change.</p> <p>*Limited in-person sessions were conducted due to COVID.</p>								
403-9	Work-related injuries	Employee engagement scores								
		2014	2015	2016	2017	2018	2019	2020	2030 Goal	
		OSHA Total Recordable Incident Rate (TRIR)	4.3	3.6	3.7	3.6	3.9	3.7	3.7	2.0
		Fatalities – OSHA Reportable	0	0	0	2	0	2	1	0
		Fatalities – Operating Collection Vehicles	0	0	3	4	1	2	1	0
		<p>In 2020, Republic had 1 OSHA reportable employee fatality and 1 employee fatality while operating a motor vehicle.</p> <p>Over the past 10 years, our safety performance has been 39% better than the industry average, based on OSHA data.</p> <p>2020 SASB Report: IF-WM-320a.1, IF-WM-320a.2, IF-WM-320a.3</p>								

GRI 404: Training and Education [2016]

Standard	Description	Cross-Reference or Answer
103-1,2,3	Management approach	<p>Our learning and talent development programs are focused on alignment with business outcomes, experiential new employee onboarding and investments in high-potential, high-performing talent.</p> <p>Onboarding and leadership acceleration programs focus on providing the fundamental skills each employee needs to succeed in his or her role. Our Leadership Trainee program, an 18-month rotational experience for recent college graduates, is another example of our commitment to providing opportunities for growth. We have developed several programs and experiences for leaders to develop necessary skills: our Sales Acceleration program, our Leadership Trainee Program and our General Manager Acceleration Program.</p> <p>2020 Sustainability Report: Human Capital: Developing Leaders of the Future</p>

GRI 404: Training and Education [2016] (Continued)

Standard	Description	Cross-Reference or Answer				
404-1	Average hours of training per year per employee	Average Onboarding Training Hours per Role				
		Drivers - including classroom, skills activities and on-route training	2019	2020		
		Customer Service Agents	132	112		
		Leadership	120	25		
		In addition to formal training provided by Republic, above, our employees develop through on-the-job experience, training provided by third-party vendors and mentoring.				
		Ongoing Training				
		Average hours per FTE of training and development	2017	2018	2019	2020
		Average spend per FTE on training and development*	16	16	16	16
						\$234
		*Average spend per FTE is the cost for development of content and execution of trainings, excluding travel and living expenses, overhead and capital to operate our driver training centers, training materials and certain other costs.				

GRI 405: Diversity and Equal Opportunity [2016]

Standard	Description	Cross-Reference or Answer
103-1,2,3	Management approach	<p>Our approach to inclusion and diversity is guided by both our Human Rights Policy and our Code of Business Ethics and Conduct. We strive to create an inclusive and diverse culture where all employees can thrive and feel welcomed and valued. Our Mission of Supporting an Inclusive Culture (M.O.S.A.I.C.) is driven by our office of inclusion and diversity and supported by the M.O.S.A.I.C. Council and our business resource groups (BRGs). Our approach enables us to continue to develop new strategies and activities to create a more inclusive work environment and diverse workforce. Through these efforts, we can leverage our best thinking to improve our culture and better serve our customers.</p> <p>Our Corporate Governance Guidelines dictate that, to assist in promoting diversity, the Board shall take reasonable steps to ensure that new Board nominees are properly drawn from a pool that includes diverse candidates, including women and minority candidates. The Board and the Nominating and Corporate Governance Committee continue to assess the need to expand the breadth of experience, expertise and viewpoints represented collectively by our directors.</p> <p>2020 Sustainability Report: Human Capital</p>

GRI 405: Diversity and Equal Opportunity [2016] (Continued)

Standard	Description	Cross-Reference or Answer		
405-1	Diversity of governance bodies and employees		2019	2020
		Female share of Board of Directors	36.4%	40%
		Female share of total workforce	18.6%	18.5%
		Females in all management positions, including junior, middle and senior management (as % of total management workforce)	21.6%	22.8%
		Females in junior management positions, i.e. first level of management (as % of total junior management positions)	21.0%	22.2%
		Females in top management positions, i.e. maximum two levels away from the CEO or comparable positions (as a % of total top management positions)	17.4%	30.4%
		Non-white share of total workforce (excluding ethnically unknown)	47.3%	46.5%
	Female share of Board of Directors in 2019 was updated to match the Board composition at the end of the reporting year, December 31, 2019.			
		2019	2020	
	Age Diversity			
	<30 years old	11.39%	10.75%	
	30-50 years old	49.82%	48.94%	
	>50 years old	38.79%	40.31%	
	Approximately 7% of our workforce are veterans.			

GRI 413: Local Communities [2016]

Standard	Description	Cross-Reference or Answer
103-1,2,3	Management approach	<p>Our Human Rights Policy defines our commitment to be good neighbors in the communities in which we live and work. This commitment is brought to life through our charitable giving foundation, National Neighborhood Promise and our ambitious goal to impact the lives of 20 million of our neighbors by 2030. In addition, we maintain a Community Relations team, who oversee relations with the communities where we operate and maintain open channels of communications to respond to community concerns.</p> <p>We believe that strong communities create a ready labor pool, drive housing and business growth, and foster a desire for consumers to handle recycling and waste in the most responsible way. However, more than 50 million people, or one in six, are living in economically distressed ZIP codes across the United States.⁴ People residing in these areas experience lower graduation rates, increased incidents of crime, disproportionate health problems and unemployment or underemployment.</p> <p>We stand for strong neighborhoods and investing in the communities where we live and work is important to us. To be America's preferred recycling and waste services partner, we must first be a good neighbor in all the communities we serve. And being a good neighbor goes far beyond delivering superior customer service and environmental compliance. It requires a commitment to the vitality of the entire community. Therefore, we contribute in three ways: we give grants to nonprofit charitable organizations funded through the Foundation or our local business units, we make in-kind contributions of our products and services, and we promote employee volunteerism.</p> <p>The work we do to strengthen neighborhoods across the country is a meaningful reflection of our Company values and commitment to driving long-term change. We know that people care deeply about making their neighborhoods better and stronger, but they often lack appropriate tools or resources. Through partnerships with local nonprofits, Republic is committed to making a durable and meaningful impact in our communities. As we increase our investments in neighborhood revitalization, we drive long-term value for all our stakeholders.</p> <p>Charitable giving promotes healthy communities, which are good for our employees, our customers and our business. It creates opportunities for employee involvement, driving their connection to our workplace and to each other.</p> <p>Read about progress towards our goal to positively impact 20 million people by 2030 and the programs that will help us get there in our 2020 Sustainability Report: Communities. We will continue to monitor the progress we are making on our strategic community investment goal. As we assess trends in data and impact, we will continue to adjust our investments, and level of activity in each area, to meet our objectives as effectively and efficiently as possible.</p>

⁴Economic Innovation Group: 2018 Distressed Communities Index

GRI 413: Local Communities [2016] (Continued)

Standard	Description	Cross-Reference or Answer										
413-1	Operations with local community engagement, impact assessments, and development programs	100% of our operations have local community engagement and/or local community development programs available to them via the three giving pathways described above.										
		<table border="1"> <thead> <tr> <th>Cumulative</th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2030 Goal</th> </tr> </thead> <tbody> <tr> <td>People positively impacted</td> <td>1.8 million</td> <td>2.8 million</td> <td>4.9 million</td> <td>20 million</td> </tr> </tbody> </table>	Cumulative	2018	2019	2020	2030 Goal	People positively impacted	1.8 million	2.8 million	4.9 million	20 million
		Cumulative	2018	2019	2020	2030 Goal						
		People positively impacted	1.8 million	2.8 million	4.9 million	20 million						
		Republic gave approximately \$8.7 million back to the communities it serves in 2020.										
		<table border="1"> <thead> <tr> <th></th> <th>2018</th> <th>2019</th> <th>2020</th> </tr> </thead> <tbody> <tr> <td>Cash Contributions</td> <td>\$3,744,583</td> <td>\$4,068,177</td> <td>\$7,491,615</td> </tr> <tr> <td>In-Kind Giving</td> <td>\$2,042,505</td> <td>\$2,037,342</td> <td>\$1,247,115</td> </tr> </tbody> </table>		2018	2019	2020	Cash Contributions	\$3,744,583	\$4,068,177	\$7,491,615	In-Kind Giving	\$2,042,505
	2018	2019	2020									
Cash Contributions	\$3,744,583	\$4,068,177	\$7,491,615									
In-Kind Giving	\$2,042,505	\$2,037,342	\$1,247,115									
413-2	Operations with significant actual and potential negative impacts on local communities	2020 SASB Report: IF-WM-120a.2 2020 Sustainability Report: A Focus on Environmental Justice										

GRI 415: Public Policy [2016]

Standard	Description	Cross-Reference or Answer																
103-1,2,3	Management approach	<p>We recognize the importance of transparency related to political contributions for our stakeholders. The company and its sponsored PAC follow all applicable federal, state and local campaign finance regulations regarding public disclosure. Reports are filed with applicable agencies, which are then made available to company employees and the public at large via websites or via request as dictated by the agency. In addition, we have a publicly available policy regarding political contributions, which describes our protocols for political engagement, our PAC and our involvement with trade organizations. The policy can be found online at our Investor Relations website.</p> <p>Republic's national focus areas are related to solid waste, environment, energy, transportation, labor and taxes. We work closely with our trade associations, lobbying teams and other partners to develop and maintain positions on these matters that are consistent with our corporate strategy and sustainability objectives, where possible.</p>																
415-1	Political contributions	<table border="1"> <thead> <tr> <th></th> <th>2018</th> <th>2019</th> <th>2020</th> </tr> </thead> <tbody> <tr> <td>Federal lobbying</td> <td>\$247,000</td> <td>\$242,000</td> <td>\$245,330</td> </tr> <tr> <td>Local, regional, national political campaigns/organizations/candidates</td> <td>\$944,968</td> <td>\$611,824</td> <td>\$961,236</td> </tr> <tr> <td>Trade associations/Tax-exempt groups</td> <td>\$372,848</td> <td>\$426,440</td> <td>\$516,830</td> </tr> </tbody> </table> <p>Significant contributions (above \$200,000 per year) include the following:</p> <ol style="list-style-type: none"> 1. West Front Strategies, Inc, for \$245,330. West Front Strategies represents Republic on legislative and regulatory matters via advocacy efforts at the federal level. 2. We also contributed to an industry association, National Waste & Recycling Association (NW&RA) in the amount of \$491,830. The mission of the NW&RA is to provide leadership, advocacy, research, education and safety expertise to promote the North American waste and recycling industries, serve as their voice and create a climate where members prosper and provide safe, economically sustainable and environmentally sound services. 		2018	2019	2020	Federal lobbying	\$247,000	\$242,000	\$245,330	Local, regional, national political campaigns/organizations/candidates	\$944,968	\$611,824	\$961,236	Trade associations/Tax-exempt groups	\$372,848	\$426,440	\$516,830
	2018	2019	2020															
Federal lobbying	\$247,000	\$242,000	\$245,330															
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Trade associations/Tax-exempt groups	\$372,848	\$426,440	\$516,830															

Appendix

102-8 Information on employees and other workers

Category	Gender	Percent
Full-time	Female	18.48%
Full-time	Male	81.49%
Full-time	Other	0.03%
Full-time as percent of all employees	Total	99.49%
Part-time	Female	26.01%
Part-time	Male	73.99%
Part-time	Other	0%
Part-time as percent of all employees	Total	0.51%

102-47 List of relevant sustainability topics (Materiality Map)

	Safety	People	Climate Leadership	Communities
<p>Tier 1 – Each of these topics has a public goal to reduce risks or develop opportunities. We provide disclosure on management practices associated with these topics and plans for reducing impacts. Each topic is aligned with a Sustainable Development Goal (SDG). These topics are detailed in this GRI report.</p>	<p>Fatalities Safety</p>  <p>GRI 403</p>	<p>Employee Engagement</p>  <p>GRI 403</p>	<p>GHG Emissions Recycling Biogas Capture and Reuse</p>   <p>GRI 305, 306</p>	<p>Healthy Communities</p>  <p>GRI 413</p>
<p>Tier 2 – These slightly lower-ranking topics do not have public goals; however, we share performance data and/or management approaches in this report and/or our 2020 SASB Report.</p>		<p>Employee Relations</p>	<p>Fuel Usage (Energy) Air Emissions Leachate Handling Compliance</p>	<p>Ethics / Breaches Political Contributions Facility Siting</p>
<p>Tier 3 – We will continue to manage these lowest-ranking topics internally and will look to provide disclosures on our management approach in the future, primarily for the purpose of educating our stakeholders on our efforts in these areas.</p>		<p>Diversity Training Wellness Recruitment Retention Compensation Benefits</p>	<p>Water Use Materials Used in Operations Waste Generated Supply Chain Groundwater</p>	<p>Physical & Cyber Security Community Resilience</p>

The sustainability materiality assessment process is an ongoing initiative that stays current with emerging broader sustainability trends and the ongoing growth and evolution of our company.

302-1 Energy consumption within the organization

	2017	2018	2019	2020
Energy (GJ)	26,241,207	27,391,497	26,223,991	24,532,869

Note on 302-1:

Reporting comprises vehicles, heavy equipment, facility natural gas consumption and electricity. For all categories, management and operational control was used to assign ownership and avoid double-counting. Of this, our vehicles and heavy equipment account for 87% of our 2020 emissions, while buildings account for 13%.

302-2 Energy consumption outside of the organization

	2017	2018	2019	2020
Energy (GJ)	3,957,468	5,314,404	5,308,870	5,310,637

Note on 302-2:

Reporting comprises upstream leased assets and upstream transportation and distribution, including subcontractor hauling and third-party hauling. For all categories, management and operational control was used to assign ownership and avoid double-counting.

302-3 Energy intensity within organization

	2017	2018	2019	2020
Energy (GJ)	2,614	2,729	2,547	2,417

Note on 302-3:

Figures were determined by dividing total energy used for our vehicles, heavy equipment and buildings in GJ by revenue, as reported by our annual 10-K filings, which can be found on our [investor relations website](#).

302-4 Diesel fuel consumption

	2017	2018	2019	2020
Diesel fuel consumption (GJ)	15,875,374	15,441,004	14,762,132	13,842,218

Note on 302-4:

These reductions are a direct result of converting diesel fuels to renewable natural gas, as part of our greater emissions reductions strategies.

305-1 Direct (Scope 1) GHG emissions

Emission Category (MTCO ₂ e)	2017	2018	2019	2020
Total Scope 1 Emissions	13,487,089	13,199,886	13,931,728	13,214,960
Landfill Methane	11,981,159	11,741,891	12,506,584	11,929,759
Fleet	1,468,403	1,368,712	1,341,269	1,239,442
Non-Fleet/Other	37,527	89,283	83,875	45,759
Biogenic Emissions	7,232,596	7,575,173	7,404,894	7,483,232

Notes on 305-1:

Scope 1 emissions reported are independent of any GHG trades, such as purchases, sales or transfers of offsets or allowances. The inventory includes CO₂, CH₄ and N₂O emissions from fuel consumption. HFC emissions from refrigerant use, PFCs, NF₃ and SF₆ are not included, as Republic does not use these compounds at a materially reportable level. Emissions factors used for electricity and other fuels are subregion-, country- or region-specific where applicable, using the latest databases from governmental sources (i.e., U.S. EPA's eGRID and UK's Defra for mobile sources to supplement eGRID data gaps).

Biogenic carbon emissions are relevant to Republic and include: CO₂ from the combustion of landfill gas via flares, CO₂ passing through on-site combustion devices, fugitive CO₂ generated from the biological decomposition of waste in landfills, CO₂ as a product of CH₄ oxidation in the landfill cap, mobile combustion of biodiesel and biomethane.

The five sources of biogenic carbon emissions listed above are reported in aggregate as "Biogenic Emissions" and treated separately from Scope 1 in accordance with the GHG Protocol. The first three sources comprise 92% of Republic Service's biogenic emissions. Republic considers these as a part of our Scope 1 emissions but reports them separately (per GHG Protocol), as they are biogenic in nature or not in the scope of U.S. EPA reporting requirements for landfills. Republic follows guidance from U.S. EPA on determining emissions of these sources of solid, gaseous, liquid and biomass fuels from: Mandatory Reporting of Greenhouse Gases Final Rule, 74 Fed. Reg. 56260 (Oct. 30, 2009). See Tables C1 and C2 at 56409 and 56410. Republic also follows guidance from U.S. EPA on revised emission factors for selected fuels from: Mandatory Reporting of Greenhouse Gases Final Rule, 75 Fed. Reg. 79091 (Dec. 17, 2010).

We also have carbon from municipal solid waste that is permanently biologically sequestered in landfills, thereby removing it from the carbon cycle. However, this total is not represented in our inventory, as it does not impact our footprint. It includes carbon from municipal solid waste (MSW) that is permanently biologically sequestered by the landfill, which acts as a sink, and as such, emissions from MSW are avoided. The annual MSW waste input figures reported by Republic have been used to calculate the carbon sequestered using a 2008 U.S. EPA waste characterization study.

305-2 Energy indirect (Scope 2) GHG emissions

Emission Category (MTCO ₂ e)	2017	2018	2019	2020
Location-based	265,661	304,056	242,878	237,148
Market-based	286,278	300,149	254,973	238,413

Notes on 305-2:

Indirect emissions sources include electricity and estimated natural gas used in buildings and facilities. Republic follows the operational control consolidation approach.

305-3 Other indirect (Scope 3) GHG emissions

Emission Category (MTCO ₂ e)	2017	2018	2019	2020
Purchased goods and services	1,939,272	1,912,163	2,005,961	1,797,689
Capital goods	447,954	490,155	516,148	494,760
Fuel- and energy-related activities	406,523	428,909	406,356	382,994
Upstream transportation and distribution	280,739	376,417	377,745	383,335
Waste generated in operations	77,668	71,386	90,767	117,916
Business travel	10,094	8,342	9,089	3,923
Employee commuting	13,912	15,959	13,466	9,423
Upstream leased assets	3,620	4,674	4,224	2,636
Use of sold products	10	10	10	10
Scope 3 Total	3,179,522	3,308,108	3,423,766	3,192,686

Notes on 305-3:

Republic includes Scope 3 emissions for the nine listed categories. Refer to our CDP Report for additional details on the standards, methodologies and assumptions used to calculate the data reported in this Indicator. Other Scope 3 emissions categories are not considered materially reportable by Republic, as they do not apply to our business model. The inventory includes CO₂, CH₄ and N₂O emissions from fuel consumption and purchased electricity and landfill emissions. HFC emissions from refrigerant use, PFCs, NF₃ and SF₆ are not included, as Republic does not use these compounds at a materially reportable level.

Continued on following page

305-3 Other indirect (Scope 3) GHG emissions (Continued)

Unless otherwise stated, Republic uses Environmentally Extended Economic Input Output (EEIO) analysis based on its annual supplier and procurement spend data to calculate Scope 3 emissions. The spend data was mapped to corresponding industry sectors and then multiplied by cradle-to-gate emission factors for the activity to provide estimated carbon emissions associated with the extraction, production and transportation of the Scope 3 category during the reporting year. This may represent an under- or over-reporting of emissions in certain supplier categories and specific suppliers based on available spend data due to the nature of cost and accrual accounting. We anticipate improving the methodology and availability of data in the future, which will impact our year-over-year reporting and trends over time.

Fuel- and energy-related activities - Emissions were calculated for fuel- and energy-related activities (not included in Scope 1 or 2) by totaling activity data for each Scope 1 fuel type and Scope 2 electricity consumption by country. These totals were multiplied by their relevant specific emission factors from UK Defra / DECC 2020 Conversion Factors for Company Reporting; except in the case of electricity Transmission and Distribution Loss emission factors, for which emission factors from UK Defra/DECC 2017 Conversion Factors for Company Reporting were used, as UK Defra/DECC ceased publishing these in 2018. Next year, Republic will move to using the IEA emission factors for electricity Transmission and Distribution Loss, as recommended by Defra/DECC.

Upstream transportation and distribution - Republic maintains detailed cost data for third-party hauler and subcontract collection services that it uses to support its collection services. An assessment of spend on fuel as a percent of total spend on third-party hauling has been made and is used to determine the quantity of fuel consumed by the third-party fleets using the 2020 DOE national average for Ultra Low Sulfur Diesel (ULSD). These total gallons of third-party fuel used are then used for these upstream transportation and distribution emission calculations. Fuel used by subcontract collection vehicles is also calculated. The fuel spend estimate is similarly converted to gallons of diesel using the 2020 DOE national average for ULSD, which is then used to calculate GHG emissions. U.S. EPA Climate Leaders: Emission Factors for Greenhouse Gas Inventories, 2020 were used to calculate the emissions.

Business travel - Annual data for air travel, rail travel and rental car travel is provided by Republic's travel agency. Air travel data is broken out by each flight leg and the distances, which is used to calculate total short-, medium- and long-haul miles: short flights (<300 mi), medium flights (300-2300 mi), long flights (>2300 mi). Republic's travel agency in 2019 was able to provide miles by cabin class. UK DEFRA 2019 emissions factors with radiative forcing are used to calculate the air travel GHG emissions, based on distance threshold and cabin class. Rail travel data was provided in terms of distance traveled. U.S. EPA Climate Leaders: Emission Factors for Greenhouse Gas Inventories, 2019 were used to calculate the emissions from the rail travel mileage. The rental car report in 2019 provided fuel volumes. U.S. EPA Climate Leaders: Emission Factors for Greenhouse Gas Inventories, 2019 were used to calculate the emissions from the rental car gasoline.

Use of sold products - This figure represents a portion of the composted tonnage sold to downstream users, and the corresponding emissions from transporting and turning compost piles, but does not include the negative emissions savings associated with the carbon storage resulting from the compost application to soils.

305-4 GHG emissions intensity

	2017	2018	2019	2020	Percent Change ('17- '20)
Revenue (\$USD Millions)	10,042	10,041	10,299	10,154	1%
Scope 1 Emissions (MTCO ₂ e)	13,487,089	13,199,886	13,931,728	13,214,960	-2%
MTCO ₂ e/\$M Revenue	1,343	1,315	1,353	1,302	-3%
Scope 2 Emissions (MTCO ₂ e)	286,278	300,149	254,973	238,413	-17%
MTCO ₂ e/\$M Revenue	28	30	25	23	-18%
Scope 1&2 Emissions (MTCO ₂ e)	13,773,367	13,500,035	14,186,701	13,453,373	-2%
MTCO ₂ e/\$M Revenue	1,372	1,344	1,377	1,325	-3%

Notes on 305-4:

EPA-mandated calculations are not well-suited to track landfill emissions, due to the assumptions of their projection model. We are actively working toward accurate and continuous measurement of fugitive landfill emissions and have committed to investigate better methods for these calculations in support of our science-based GHG emissions target. Until those are available, an increase/decrease in reported Scope 1 emissions may be driven primarily by projected landfill fugitive emissions – a challenge faced throughout our industry. As noted in our sustainability report, in the absence of accurate and continuous measurement, we continue to use EPA calculations to represent our landfill emissions for reporting purposes.

305-5 Reduction of GHG emissions

Scope (MTCO ₂ e)	2017	2018	2019	2020	Percent Change ('17- '20)
Scope 1	13,487,089	13,199,886	13,931,728	13,214,960	-2%
Scope 2	286,278	300,149	254,973	238,413	-17%
Total	13,773,367	13,500,035	14,186,701	13,453,373	-2%

Notes on 305-5:

Totals do not add due to rounding. See notes on table 305-4, above. See also management approach for this topic for more information about Republic's efforts to reduce Scope 1 and 2 GHG emissions.

305-7 Nitrogen oxides (NO_x), Sulfur oxides (SO_x), and other significant air emissions

Air Emissions (metric tons)	2017	2018	2019	2020
NOx (excluding N ₂ O)	1,304	1,400	1,438	1486
SOx	314	339	347	359
Volatile organic compounds (VOCs)	31	33	34	36
Hazardous Air Pollutants (HAPs)	49	53	54	56

Notes on 305-7:

Landfill air emissions were calculated using measured landfill gas flows at individual open or enclosed flares as reported to the U.S. EPA under the Greenhouse Gas Reporting Program (GHGRP), engineering calculations and mass balance calculations. These same gas flows are used in Republic's annual greenhouse gas reporting. It should be noted that the emissions factors and calculations used below are based on the aggregate gas flow across the company and we are not using individual site emission factors and calculations. Calculations were based only on device type (i.e. open flare or enclosed flare) and did not consider other site-specific information such as permit limits, source test results or other factors.