



Sustainability in Action

2021 GRI Report



About this Report

In this document, Republic Services has reported in accordance with the GRI Standards for the period January 1, 2021 through December 31, 2021. Although we report in accordance with the GRI Standards, in many cases we provide disclosures and context that go beyond GRI requirements to share additional insights into our sustainability performance. The results of our materiality assessment are shown in [3-2 List of Material Topics](#), and we report on all Priority Topics, as well as many others. This GRI Report should be consulted alongside our other sustainability and ESG reporting¹, available at RepublicServices.com/Sustainability. We invite you to share your thoughts with us at Sustainability@RepublicServices.com.

Unless otherwise stated, all references in this 2021 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 all of 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 (“2021 10-K”) for the year ended December 31, 2021, 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. 2021 10-K, 2022 Proxy Statement, etc.).

Investor Relations Website

[2021 10-K](#)

[2022 Proxy Statement](#)

[Code of Business Ethics & Conduct](#)

[Corporate Governance Guidelines](#)

[Human Rights Policy](#)

[Nominating & Corporate Governance Committee Charter](#)

[Political Contributions Policy](#)

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

[Sustainability & Corporate Responsibility Committee Charter](#)

[Talent & Compensation Committee Charter](#)

Sustainability Website

[2021 Sustainability Report](#)

[2021 SASB Report](#)

[2021 GRI Report \(this report\)](#)

[2021 TCFD Report](#)

[2021 Sustainability Assurance Statement](#)

[Environmental Policy](#)

[Safety Policy](#)

GRI 2: General Disclosures

Standard	Description	Cross-Reference or Answer
2-1	Organizational Details	Legal name, ownership, incorporation, location of headquarters and countries of operation are all described in our 2021 10-K .
2-2	Entities Included in the Organization's Sustainability Reporting	The scope of our 2021 sustainability reporting matches that of our financial reporting, described in our 2021 10-K , unless otherwise noted. Republic Services did not conduct any material business activities outside of the United States during the reporting period.
2-3	Reporting Period, Frequency and Contact Point	We report on our sustainability performance annually using our fiscal year, which is the calendar year. The reporting period for this report is 2021 and this report was published in July 2022. We welcome your comments at sustainability@republicservices.com .
2-4	Restatements of Information	<p>Beginning in our 2021 reporting, we rebaselined our emissions calculations (2017-2021) reflected in GRI 302 and GRI 305 as follows:</p> <ul style="list-style-type: none"> • All acquisitions, divestitures and methodology changes that have occurred during the reporting period are accounted for through all years reported in this report, back to the 2017 baseline year for our 2030 goal; • Our greenhouse gas (GHG) inventory includes only emissions from landfills where we have operational control to manage landfill gases, which are the vast majority of the landfills where we have activities; • Landfill emissions calculations were conducted using the SWICS 3-tier approach, allowing us to more accurately represent the emissions-reducing impacts of our investments, i.e., gas collection and landfill cover efficiency improvements; • Our fleet fuel usage methodology is more closely linked to our activities; • Our integrated utility bill software more accurately represents associated emissions, increasing the use of measured data in place of estimates; • We improved the methodology used to calculate scope 3 category 7 (Employee commuting); and • Employee relocation was previously reported in scope 3 category 7 and we have moved it to category 1 (Purchased goods and services). <p>These revisions ensure that our goal to reduce scope 1 and 2 GHG emissions 35% below our 2017 baseline by 2030, approved by the Science Based Target initiative (SBTi) compares like-for-like assets across our reporting years.</p> <p>Within GRI 306-2, we have rebaselined our reporting (2017-2021) to reflect that the key materials within our Circular Economy goal have been revised to exclude oil and biogas, and to include all categories of paper. In addition, all acquisitions and divestitures that have occurred during the reporting period are accounted for back to the 2017 baseline year for our 2030 Circular Economy and Renewable Energy goals.</p> <p>We determined that past reporting of Cash Contributions and In-Kind Giving in GRI 413-1 was incomplete. We revised our methodology to include all components of both categories and have restated our historical reporting to follow the same methodology.</p>
2-5	External Assurance	Republic has completed a third-party limited assurance of its publicly reported 2013 through 2021 scope 1, 2 and 3 GHG emissions in accordance with the ISO 14064-3 Standard, which it has done annually for several years. In 2021, Republic expanded this limited assurance across numerous safety and other metrics, as stated in our assurance statement. We have received assurance for the reporting year as well as the baseline year (2017) for our goals measuring percent change, which have been rebaselined as described in GRI 2-4 (above). 2021 Sustainability Assurance Statement

GRI 2: General Disclosures

Standard	Description	Cross-Reference or Answer
2-6	Activities, Value Chain and Other Business Relationships	2021 10-K : Item 1, Item 7, Item 8 2021 SASB Report : IF-WM-000.B, IF-WM-000.C, IF-WM-000.D
2-7	Employees	See Appendix 2-7
2-8	Workers Who Are Not Employees	We do not track non-employee demographic data.
2-9	Governance Structure and Composition	2022 Proxy Statement
2-10	Nomination and Selection of the Highest Governance Body	Nominating & Corporate Governance Committee Charter , 2022 Proxy Statement
2-11	Chair of the Highest Governance Body	The Chair of our Board is independent, 2022 Proxy Statement
2-12	Role of the Highest Governance Body in Overseeing the Management of Impacts	<p>Board Committee Charters are available on our Investor Relations website; 2022 Proxy Statement, 2021 Sustainability Report: Governance and Materiality sections; 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. 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 on the strategy and enterprise. Finally, the outcome of the ongoing ERM process is provided to the ERM Council, comprised of 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 10-K.</p> <p>Several environmental topics, such as energy consumption and greenhouse gas emissions, as well as several social topics, such as safety, employee engagement and community health, have impacts on our business, the communities we serve and other key stakeholder groups. 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 3-1 and GRI 3-2). 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 throughout our reporting, including 10-K, 10-Q and TCFD reports.</p>
2-13	Delegation of Responsibility for Managing Impacts	2022 Proxy Statement ; Sustainability & Corporate Responsibility Committee Charter ; 2021 Sustainability Report : Governance; 2021 TCFD Report : Governance

GRI 2: General Disclosures

Standard	Description	Cross-Reference or Answer
2-14	Role of the Highest Governance Body in Sustainability Reporting	2022 Proxy Statement ; Sustainability & Corporate Responsibility Committee Charter ; 2021 Sustainability Report : Governance
2-15	Conflicts of Interest	Code of Business Ethics & Conduct ; Nominating and Corporate Governance Committee Charter ; Corporate Governance Guidelines
2-16	Communication of Critical Concerns	Sustainability & Corporate Responsibility Committee Charter ; 2022 Proxy Statement
2-17	Collective Knowledge of the Highest Governance Body	2022 Proxy Statement
2-18	Evaluation of the Performance of the Highest Governance Body	Corporate Governance Guidelines ; 2022 Proxy Statement
2-19	Remuneration Policies	2022 Proxy Statement
2-20	Process to Determine Remuneration	Talent & Compensation Committee Charter ; 2022 Proxy Statement
2-21	Annual Total Compensation Ratio	In 2020, the CEO pay ratio was 198-to-1 and in 2021, following a planned CEO transition, the CEO pay ratio was 125-to-1, representing a 37% reduction. See discussion on page 79 of our 2022 Proxy Statement .
2-22	Statement on Sustainable Development Strategy	2021 Sustainability Report : Message from Jon Vander Ark, CEO & President

GRI 2: General Disclosures

Standard	Description	Cross-Reference or Answer
2-23	Policy Commitments	<p>Consistent with the precautionary principle, we advocate a risk-based approach to our operations through our enterprise risk management process, as described in GRI 2-12.</p> <p>We leverage the following best practice standards, guidelines and frameworks when developing our own sustainability strategy and associated policies and practices:</p> <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 and the Safety section of our 2021 Sustainability Report for more details.</p> <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 2021 Sustainability Report: Ethics & Compliance.</p> <p>Our Human Rights Policy is one example of our core values in action: Human-Centered. We respect the dignity and unique potential of every person. 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 the environmental, social and ethical expectations of our service partners.</p>
2-24	Embedding Policy Commitments	2022 Proxy Statement ; Code of Business Ethics & Conduct ; 2021 Sustainability Report : Governance
2-25	Processes to Remediate Negative Impacts	2022 Proxy Statement ; Code of Business Ethics & Conduct ; 2021 Sustainability Report : Governance
2-26	Mechanisms for Seeking Advice and Raising Concerns	Any ethical concerns regarding Republic Services may be anonymously reported using the AWARE Line, 1-866-329-2734 or at AWARELINE.RepublicServices.com . 2022 Proxy Statement ; Code of Business Ethics & Conduct ; 2021 Sustainability Report : Governance

GRI 2: General Disclosures

Standard	Description	Cross-Reference or Answer
2-27	Compliance with Laws and Regulations	<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. Our operations are designed to handle and dispose of our customers' waste responsibly by minimizing impacts to the air, water and land wherever 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. Our facilities and operations are subject to a variety of regulations at various jurisdictions, described in detail in Item 1 of our 2021 10-K, and we strive to go above and beyond these legal requirements.</p> <p>For many years, Republic's Environmental Policy has guided our environmental management system (EMS) to engage responsibly. 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 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. Top-level governance of environmental management is directed by our Board's Sustainability & Corporate Responsibility Committee.</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 Company is organized into 11 Areas, each with an Area Environmental Manager who is supported by two Directors of Engineering from our headquarters and who oversees several Environmental Managers responsible for the implementation of the items described in our Corporate Environmental Compliance Policy. Environmental specialists and technicians support environmental managers across each Area.</p> <p>The Corporate Legal Department, with the support of Corporate Environmental Compliance, is responsible for documenting, storing and tracking 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 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 and support a culture of consistency and policy compliance to further strengthen our EMS program.</p> <p>Our EMS program consists of several policies, manuals, standard operating procedures, reporting forms, tracking databases to ensure compliance with the Company's policy and annual training for employees on role-related, environmental topics. Key pieces of our EMS program are listed below.</p> <p>Corporate Environmental Compliance Policy: This is the overarching policy for our EMS, which includes third-party facility approval and request processes. Republic requires the use of approval procedures including our Third-Party Facility request form for all agreements involving non-Republic disposal, transfer stations or recycling sites.</p> <p>Landfill Air Compliance Program Standard: This standard provides guidance and a consistent approach for air compliance services at our sites. All personnel responsible for conducting and supporting air compliance services at Republic landfills use this document, including our engineers, environmental managers and third-party consultants.</p> <p style="text-align: right;"><i>Continued on following page</i></p>

GRI 2: General Disclosures

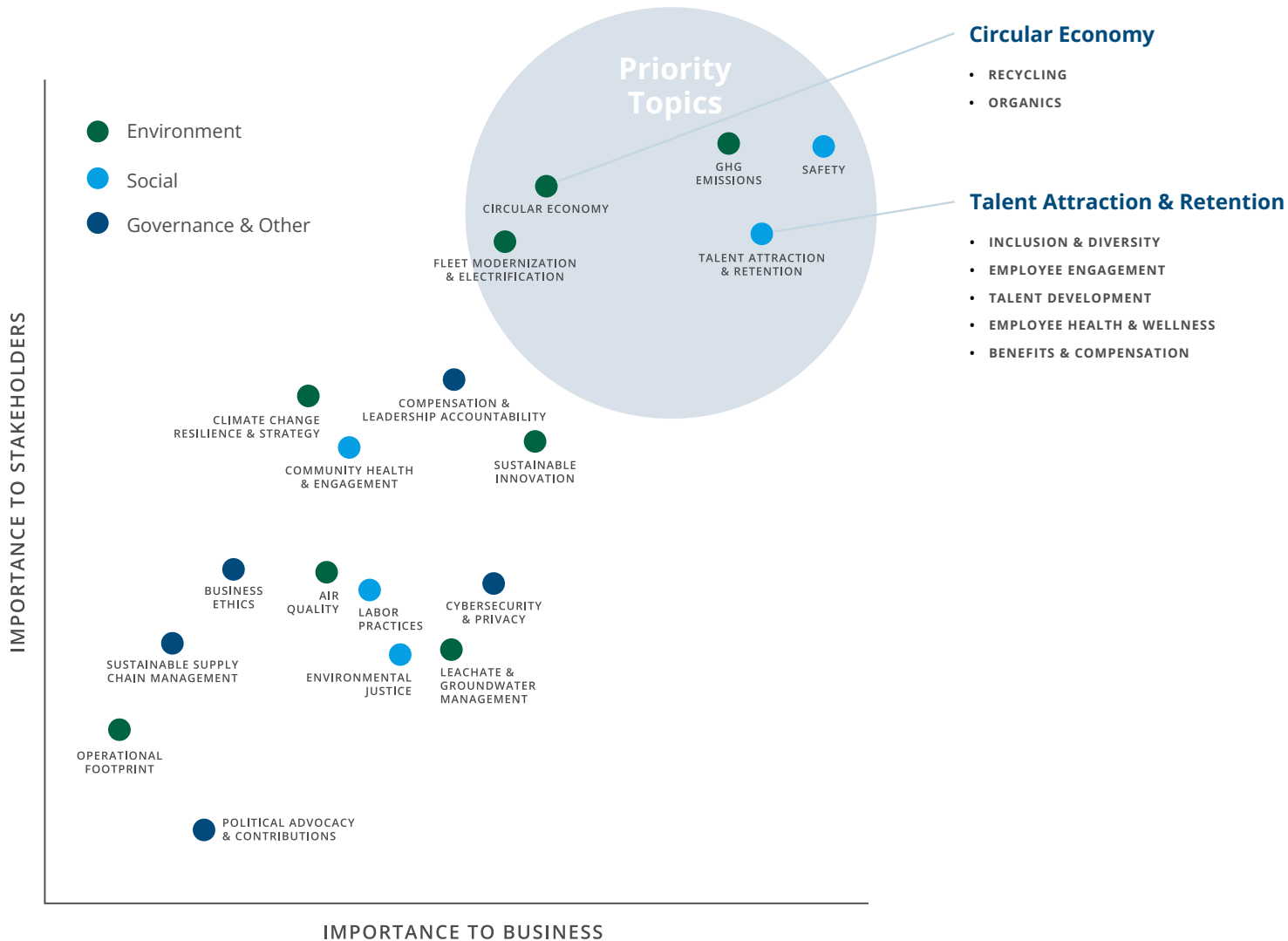
Standard	Description	Cross-Reference or Answer
2-27 <i>Continued</i>	Compliance with Laws and Regulations	<p>Landfill and Transfer Station Operating Standard and Best Practices User Guide: Standards manuals provide practical and comprehensive guidance regarding the operating standards all of Republic's active landfills and transfer stations. The guides contain field-tested best practices and procedures that enable facility managers to comply.</p> <p>Procurement Policy: Republic has a centralized procurement team. Their policy includes operating procedures for providing an efficient, competitive and ethical environment in dealing with suppliers. The team ensures that the Levels of Authority policy and process is followed for the approval of capital expenditures. They also ensure that suppliers adhere to our Supplier Code of Conduct.</p> <p>Special Waste Management Policy: This policy enables us to meet federal requirements under Resource Conservation and Recovery Act (RCRA) and implementing regulations (40 CFR Part 261) as well as Toxic Substances Control Act (TSCA) and implementing regulations for polychlorinated biphenyl waste (40 CFR Part 761), along with applicable state or permit requirements to prevent acceptance of wastes not eligible for management at Republic landfills. For wastes deemed acceptable, additional SOPs (e.g. Liquid Waste Solidification, Treated Medical Waste and Radiation Monitoring) help us facilitate proper handling, transportation and disposal of Special Wastes.</p> <p>Engineering Policy: This policy guides Corporate and Field personnel on 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. Additionally, it addresses due diligence, M&A and business development.</p> <p>Each year, we participate in independent auditing at a cross-section of facilities, covering roughly 10% of our landfills. Audits are conducted by CHWMEG Inc. a nonprofit trade association comprised of manufacturing and similar industrial organizations seeking to avoid environmental impacts from their operational waste. CHWMEG Inc. conducts comprehensive, third-party reviews of commercial facilities that treat, store, dispose of, recycle or transport waste. CHWMEG members select the facilities included in the review program. Independent and experienced environmental firms contracted by CHWMEG Inc. evaluate facilities using a standard protocol. Member companies share the cost of facility reviews.</p> <p>We provide standard checklists and review questionnaires for our safety, operations and compliance teams to use during site visits. These templates provide a standardized framework for self-evaluation of facility performance in 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>Certifications: Republic provides environmental services to the oil and gas production industry. Some materials hauled have the potential of being defined by DOT as hazardous; therefore, all field operations are required to 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 style="text-align: right;"><i>Continued on following page</i></p>

GRI 2: General Disclosures

Standard	Description	Cross-Reference or Answer
2-27 <i>Continued</i>	Compliance with Laws and Regulations	<p>Evaluation: The Sustainability and Corporate Responsibility Committee was formed in 2015 and, per its Charter: 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, strategies, goals, objectives, policies and practices that pertain to (i) Republic's sustainability performance, including sustainability innovation; (ii) Republic's corporate responsibilities that are of significance to the Company and its role as a socially responsible organization; and (iii) risks and opportunities of the Company, including climate change, safety, environmental and reputational risks and opportunities, facing the Company and the practices by which these risks are managed and mitigated.</p> <p>Air and odors 2021 SASB Report: IF-WM-120a.3, RSG-AQ-01 Leachate, water and hazardous waste 2021 SASB Report: IF-WM-150a.3, RSG-ML-01 2021 10-K: Item 1 - Regulation</p>
2-28	Membership Associations	<p>Republic is a member of the following associations related to our sustainability strategy:</p> <ul style="list-style-type: none"> • 50/50 Women on Boards • Board.org • Direct Delivery Leadership Council (DDLCC) • 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
2-29	Approach to Stakeholder Engagement	<p>2021 Sustainability Report: Materiality 2022 Proxy Statement</p> <p>Our key stakeholders include but are not limited to customers (municipal, commercial, residential, industrial), employees, contractors, investors, supply chain partners, communities, non-governmental organizations, governmental organizations and thought leaders.</p>
2-30	Collective Bargaining Agreements	<p>2021 SASB Report: IF-WM-310a.1</p>

GRI 3: Material Topics

Standard	Description	Cross-Reference or Answer
3-1	Process to Determine Material Topics	2021 Sustainability Report: Materiality
3-2	List of Material Topics	



GRI 200: Economic Topics

GRI 201: Economic Performance [2016]

Standard	Description	Cross-Reference or Answer
3-3	Management of Economic Performance	Item 7 2021 10-K ; 2022 Proxy Statement
201-1	Direct Economic Value Generated and Distributed	2021 10-K
201-2	Financial Implications and Other Risks and Opportunities Due to Climate Change	Climate change risks and impacts to Republic: Item 1 and 1A 2021 10-K Methods used to manage these risks: 2021 10-K ; 2022 Proxy Statement and GRI 2-12 . Refer also to our 2021 TCFD Report and our FY2021 CDP Response for more detailed information on climate change risks, opportunities, implications and management approach.
201-3	Defined Benefit Plan Obligations and Other Retirement Plans	2021 10-K

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

Standard	Description	Cross-Reference or Answer
3-3	Management Anti-Corruption	<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 by choosing to do the right thing for our people, customers, shareholders, communities and environment is foundational to our values. This dedication represents the highest standards of integrity and excellence we have set for every Republic employee and all our business relationships.</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>We also have a standalone Supplier Code of Business Ethics and Conduct ("Supplier Code"), which is applicable to our vendors, contractors, consultants, agents, representatives, brokers and any other third party that provides us with goods and services. Our Supplier Code outlines our expectations with respect to our suppliers' conduct when they are doing business with, or on behalf of, Republic Services, with an emphasis on ethical, lawful conduct in every circumstance.</p> <p><i>Approach</i> The Code exemplifies our values and is the cornerstone to sustaining a strong ethical culture. We continue to act on 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. 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>
205-2	Communication and Training about Anti-Corruption Policies and Procedures	Code of Business Ethics and Conduct training is completed by 100% of employees. This training is reaffirmed every year with company-wide communications, required quizzes and/or other measures to ensure employees are acting with the Code in mind. In 2021, we distributed Ethical Decision-Making Wallet Cards to every employee. We also hosted our inaugural Ethics Awareness Week, which was a company-wide event for all employees that featured events, a panel discussion and communications focused on acting ethically and in compliance with the Code.
205-3	Confirmed Incidents of Corruption and Actions Taken	For the reporting year 2021, 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
3-3	Management of Energy	<p>Our Environmental Policy guides our commitment and efforts to continuously improve our environmental performance and reduce our impacts. Republic's largest energy consumption is in the form of transportation fuel. We have approximately 26,200 vehicles and heavy 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>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 to collect materials in wheeled carts have higher participation rates in recycling programs, broadening 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. 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 40 fueling stations as of December 31, 2021. In 2021, we piloted 4 electric collection trucks on route with plans to expand in 2022. An electric truck has efficiency benefits over diesel, enabling our fleet to travel more miles for the same unit of energy. In 2021 these electric trucks traveled 14,628 miles across 2 markets and displaced our consumption of diesel.</p>
302-1	Energy Consumption Within the Organization	See Appendix 302-1 2021 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

GRI 303: Water and Effluents [2018]

Standard	Description	Cross-Reference or Answer				
3-3	Management of Water and Effluents	<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 protecting 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	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. We closely monitor the transfer of water into our landfills through leachate collection systems and purification processes. 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. We are constrained by our operational geographies as an essential service with immobile infrastructure, which limit our ability to fully address water-related impacts. However, we make efforts to mitigate risks through water conservation strategies and management techniques.				
303-2	Management of Water Discharge-Related Impacts	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. We employ stormwater management practices such as retention basins to capture, treat and reuse water on-site. Stormwater can be reused for activities such as mandatory dust control.				
303-3	Water Withdrawal	<table border="1"> <tbody> <tr> <td>Total Withdrawal</td> <td>2021</td> </tr> <tr> <td>Total Municipal Water (megaliters)</td> <td>1,886</td> </tr> </tbody> </table> <p>These volumes do not include withdrawn well water or collected stormwater.</p>	Total Withdrawal	2021	Total Municipal Water (megaliters)	1,886
Total Withdrawal	2021					
Total Municipal Water (megaliters)	1,886					

GRI 305: Emissions [2016]

Standard	Description	Cross-Reference or Answer
3-3	Management of Emissions	<p>Our Environmental Policy guides our commitment to continuous improvement and impact reduction. We are committed to pollution prevention, and we were the first in the industry to set a science-based greenhouse gas (GHG) emissions reduction target, doing our part to combat global warming. Our scale and strength put us in a unique position to provide safe, responsible environmental services while protecting the planet and our communities.</p> <p>Landfill methane, vehicle and equipment use, and building energy all contribute to climate change, which is why we've adopted a Paris-aligned Science Based Targets initiative (SBTi) approved goal to reduce absolute scope 1 and 2 GHG emissions 35% by 2030 from a 2017 baseline. Our climate leadership allows us to reduce operating costs, minimize risks to assets, moderate impacts of fuel-price volatility and potential carbon pricing, and attract customers in a low-carbon economy. We've outlined some of the pathways that will drive our continued reductions.</p> <p>Landfill Innovation: Our modern landfills are complex, highly controlled biological systems. Our engineers design these structurally stable facilities to enable waste decomposition in a manner that manages byproducts and minimizes impact to the environment today and for years to come. Our efficient landfills collect vast volumes of would-be fugitive GHG emissions for beneficial reuse or processing, converting it from an impact into an opportunity. When reuse is not feasible, we thermally destruct gas on-site, safely destroying harmful pollutants and significantly reducing GHG emissions. We continually explore new technology and operating practices.</p> <p>Diversion of Materials from Landfill: Since landfill emissions originate from the decomposition of materials, by diverting carbon-based refuse to organics or other processing facilities, fugitive emissions will decline. We offer recycling and organics processing to our customers and advocate for regulatory environments that promote recycling.</p> <p>Reducing Fleet Emissions: Approximately 21% of our fleet operates on natural gas and since 2020, those vehicles have been fueled by 100% renewable natural gas (RNG), a low GHG emission fuel, sourced from the recovered methane. RNG provides us a competitive advantage in communities with strict emission standards, since these fuels are cleaner and less carbon-intensive. We also partner with battery and truck manufacturers to electrify our fleet. The benefits of electric trucks are plentiful: reduced carbon emissions, lower maintenance, regenerative braking, reduced noise and fewer overall impacts in the communities we serve. In 2021, we piloted four electric collection vehicles with our partner, Mack Trucks, and we are expanding adoption in 2022.</p> <p>Reducing Emissions When We Build: Our commitment to sustainable practices extends to 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>2021 Sustainability Report: Climate Leadership 2021 TCFD Report</p>

GRI 305: Emissions [2016]

Standard	Description	Cross-Reference or Answer
305-1	Direct (Scope 1) GHG Emissions	See Appendix 305-1 2021 Sustainability Report : Climate Leadership 2021 SASB Report : IF-WM-110a.1
305-2	Energy Indirect (Scope 2) GHG Emissions	See Appendix 305-2 2021 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 2021 SASB Report : IF-WM-110a.3 2021 Sustainability Report : Climate Leadership
305-7	NOx, SOx and Other Significant Air Emissions	See Appendix 305-7 2021 SASB Report : IF-WM-120a.1

GRI 306: Waste [2020]

Standard	Description	Cross-Reference or Answer
3-3	Management of Waste	<p>Republic is one of the largest providers of environmental services, recycling and waste services in North America. As of December 31, 2021, we operated facilities in 41 states through 356 collection operations, 239 transfer stations, 198 active landfills, 71 recycling processing centers, 3 treatment, recovery and disposal facilities, 6 salt water disposal wells and 7 deep injection wells. We were engaged in 77 landfill gas-to-energy and renewable energy projects and had post-closure responsibility for 124 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 2021 10-K and throughout our 2021 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 2021 10-K .																								
306-2	Management of Significant Waste-related Impacts	<p>Our management of waste-related activities is described in Item 1 and throughout our 2021 10-K. These are also described throughout our 2021 Sustainability Report, especially in the Climate Leadership section.</p> <p>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 2021 Sustainability Report: Climate Leadership. See GRI 2-4 for details regarding the restatement of this goal. We report the three most recent years as well as 2017, the baseline year for these goals.</p> <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>2019</th> <th>2020</th> <th>2021</th> <th>2030 Goal</th> </tr> </thead> <tbody> <tr> <td>Key materials recovered (metric tons)</td> <td>2,401,988</td> <td>2,515,068</td> <td>2,565,382</td> <td>2,572,403</td> <td>3,362,783</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Increase biogas sent to beneficial reuse by 50% by 2030 (2017 baseline year)</th> <th>2017</th> <th>2019</th> <th>2020</th> <th>2021</th> <th>2030 Goal</th> </tr> </thead> <tbody> <tr> <td>Beneficial biogas reuse (billion scf)</td> <td>73.4</td> <td>73.4</td> <td>72.1</td> <td>76.2</td> <td>110.1</td> </tr> </tbody> </table>	Increase recovery of key materials by 40% on a combined basis by 2030 (2017 baseline year)	2017	2019	2020	2021	2030 Goal	Key materials recovered (metric tons)	2,401,988	2,515,068	2,565,382	2,572,403	3,362,783	Increase biogas sent to beneficial reuse by 50% by 2030 (2017 baseline year)	2017	2019	2020	2021	2030 Goal	Beneficial biogas reuse (billion scf)	73.4	73.4	72.1	76.2	110.1
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306-3	Waste Generated	<table border="1"> <thead> <tr> <th>Operational waste (metric tons)</th> <th>2021</th> </tr> </thead> <tbody> <tr> <td>Total waste disposed</td> <td>10,910</td> </tr> </tbody> </table> <p>This figure refers exclusively to waste generated by Republic Services employees that was not diverted from disposal.</p>	Operational waste (metric tons)	2021	Total waste disposed	10,910																				
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306-4	Waste Diverted from Disposal	<table border="1"> <thead> <tr> <th>Operational waste diverted from landfill</th> <th>2021</th> </tr> </thead> <tbody> <tr> <td>Recycling (metric tons)</td> <td>2,315</td> </tr> <tr> <td>Diversion rate (percent)</td> <td>21.8</td> </tr> </tbody> </table> <p>The above figures refer exclusively to volumes recycled by Republic Services employees.</p> <table border="1"> <thead> <tr> <th>Customer waste diverted from landfill (million metric tons)</th> <th>2021</th> </tr> </thead> <tbody> <tr> <td>Organics</td> <td>0.9</td> </tr> <tr> <td>Recycling</td> <td>5.7</td> </tr> <tr> <td>Total</td> <td>6.6</td> </tr> </tbody> </table> <p>In 2021, we received 47.2 MMT (million metric tons) of MSW at our landfills. We diverted (collected or processed at our facilities) 6.6 MMT of recycling or organics from landfills. This equates to an overall diversion rate of 12.3%. 2021 SASB Report: IF-WM-420a.3, IF-WM-420a.4</p>	Operational waste diverted from landfill	2021	Recycling (metric tons)	2,315	Diversion rate (percent)	21.8	Customer waste diverted from landfill (million metric tons)	2021	Organics	0.9	Recycling	5.7	Total	6.6										
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GRI 308: Supplier Environmental Assessment [2016]

Standard	Description	Cross-Reference or Answer
3-3	Management of Supplier Environmental Assessment	<p>This information is applicable to both GRI 308 Supplier Environmental Assessment and GRI 414: Supplier Social Assessment.</p> <p>As an industry leader in environmental services, Republic Services is committed to more than managing our country's recycling and waste. We are focused on doing what's best for our customer, communities and our team. We lead with integrity in everything we do by living our values, to be Safe, Committed to Serve, Environmentally Responsible, Driven and Human-Centered. To preserve the trust placed in us, we count on our network of suppliers, which includes our vendors, contractors, consultants, agents, representatives, brokers, and any other third party that provides us with goods and services ("Suppliers") to commit to and uphold these same values.</p> <p>We engage with our suppliers at various times, for example, during onboarding, ongoing monitoring and management, and our sustainability-led materiality assessment. We have an expectation that our suppliers conduct their business in accordance with the highest ethical standards; adhere to all safety laws, regulations, and standards; provide a workplace free of discrimination and harassment; foster a culture of inclusion and diversity; responsibly manage their impact on our fragile environment; promote human rights and prohibit any anti-human rights activities; keep accurate business and financial records; and respect and protect Republic's information.</p> <p>Republic Services understands success comes from diverse perspectives and commitment to a diverse supply chain. Growing a diverse and inclusive supply chain is part of our ongoing strategic commitments. We are dedicated to spending \$150M with certified diverse suppliers by 2025. Milestones include an aim to attain a 50% increase in spend with certified black- and/or women-owned businesses.</p>
308-1	New Suppliers that were Screened Using Environmental Criteria	<p>We take a structured approach to identifying our critical suppliers. The process involves analyzing several factors including annual spend, type of product or service supplied, the criticality of that offering to the business, ability of the business to find a substitute, and the risk associated with the offering. In this evaluation, supplier categories are first analyzed to understand the potential impact on the business. The availability of alternatives and the speed at which they can be deployed are also included in the analysis. Once a critical category is established, the suppliers within that category go through a similar analysis to identify which suppliers will be designated critical and mitigation measures are put in place. These suppliers are added to the critical supplier list. We also utilize scorecards created by EcoVadis to evaluate key suppliers across environmental, social and ethical topics.</p>

GRI 400: Social Topics

GRI 401: Employment [2016]

Standard	Description	Cross-Reference or Answer																																												
3-3	Management of Employment	<p>Our new values, launched in 2022, reinforce who we are today, and serve as an anchor for who we aspire to be. As an employer of people from all backgrounds, our core value of Human-Centered represents our commitment to embrace the unique potential and dignity of every person at Republic Services. We believe strongly that shared values unify us as a Company and help to establish expectations for how our employees treat one another and should expect to be treated. Our talent practices acknowledge the differences and similarities that we have, ensuring fair and equitable opportunities for all.</p> <p>The COVID-19 pandemic pressure tested the resiliency of our business model and our roles as providers of an essential service. The majority of our workforce have remained in the field throughout the pandemic and the Company took swift and comprehensive action to help protect our employees and communities. We waived insurance copayments and deductibles related to COVID-19 expenses and limited on-site work to critical roles only to protect all employees. We spent millions of dollars on additional PPE (personal protective equipment) including masks, sanitizer and cleaning supplies, across all facilities, regularly deep cleaned our fleet and facilities, implemented social distancing guidelines and provided educational resources on virus prevention. At the height of the pandemic, we provided a minimum-hour guarantee for eligible employees to maintain their employment, and we launched our Committed to Serve Initiative.</p> <p>We track the effectiveness of our employment actions through both employee engagement and community impact. We also conduct annual performance and talent assessments of our employees to provide them with feedback on their work, goals for continuous improvement and to identify and enable professional development opportunities.</p>																																												
401-1	New Employee Hires and Employee Turnover	<table border="1"> <thead> <tr> <th>Employee engagement scores</th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2021</th> <th>2030 Goal</th> </tr> </thead> <tbody> <tr> <td>Company-wide</td> <td>85</td> <td>86</td> <td>85</td> <td>84</td> <td>88</td> </tr> <tr> <td>Ethnically diverse</td> <td></td> <td>88</td> <td>87</td> <td>86</td> <td></td> </tr> <tr> <td>Female</td> <td></td> <td>85</td> <td>86</td> <td>86</td> <td></td> </tr> <tr> <td>Male</td> <td></td> <td>86</td> <td>85</td> <td>84</td> <td></td> </tr> <tr> <td>Employee engagement participation rate (percent)</td> <td>82</td> <td>84</td> <td>92</td> <td>98</td> <td></td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Turnover rates</th> <th>2019</th> <th>2020</th> <th>2021</th> </tr> </thead> <tbody> <tr> <td>Driver and technician turnover</td> <td>18.6</td> <td>16.3</td> <td>21.5</td> </tr> </tbody> </table> <p>We report on turnover amongst drivers and technicians as part of our management of these two employee groups, which are critical to our business operations and represent the majority of our workforce.</p>	Employee engagement scores	2018	2019	2020	2021	2030 Goal	Company-wide	85	86	85	84	88	Ethnically diverse		88	87	86		Female		85	86	86		Male		86	85	84		Employee engagement participation rate (percent)	82	84	92	98		Turnover rates	2019	2020	2021	Driver and technician turnover	18.6	16.3	21.5
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GRI 401: Employment [2016] (Continued)

Standard	Description	Cross-Reference or Answer		
401-2	Benefits Provided to Full-Time Employees	We offer our employees numerous benefits, including life insurance, accident insurance, long- and short-term disability, parental leave (primary and secondary parent), breast-feeding/lactation facilities, paid time off, health care (medical, vision and dental insurance for employee and family), Employee Assistance Program, relocation assistance, wellness programs, stock purchase plan, 401-K (retirement plan) with employer matching, bereavement leave, gym incentives, flex scheduling, telecommuting/work-from-home options, employee recognition programs, workforce training, skills training, leadership development programs, job retraining, mentoring programs and many more.		
401-3	Parental Leave	Parental Leave	2020	2021
		Number of eligible female employees	7,185	7,493
		Number of eligible male employees	23,809	23,614
		Number of female employees who took parental leave	98	153
		Number of male employees who took parental leave	376	464
		Number of female employees retained 12 months after return to work	62	113
		Number of male employees retained 12 months after return to work	255	362
		Female employees retained 12 months after return to work (percent)	63	74
		Male employees retained 12 months after return to work (percent)	68	78

GRI 403: Occupational Health and Safety [2018]

Standard	Description	Cross-Reference or Answer
3-3	Management of Occupational Health and Safety	<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 & 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 our employees have won Driver of the Year in all categories for the last two years.</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 2021 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>

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 in this GRI 403: Occupational Health and Safety. 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 attestation 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 federal, state, and local safety compliance, and provide statistics for performance standards to Company goals. Field Safety Staff include: 11 Area Safety Managers; 3 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, DOT Compliance, Manager, Environmental and Health Safety Programs; Sr. Safety Analyst; and 3 Safety Training Managers.</p> <p>b. One of our Core Values is that we are Safe (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>Our flagship Safety Amplified program builds on OSHA safety and health management program guidelines and recommended practices to bring safety at Republic beyond regulatory requirements. The scope of Safety Amplified includes all employees of Republic, at Republic-owned and -operated facilities, for all Company activities described in our 2021 10-K. In addition, any contractor or third-party conducting business at our facilities is included in the scope of Safety Amplified.</p> <p>2021 Sustainability Report: Safety</p>								
403-2	Hazard Identification, Risk Assessment, and Incident Investigation	<table border="1"> <thead> <tr> <th></th> <th>2019</th> <th>2020</th> <th>2021</th> </tr> </thead> <tbody> <tr> <td>Divisions assessed</td> <td>30</td> <td>30</td> <td>30</td> </tr> </tbody> </table> <p>Our risk assessment identifies priority divisions, which are audited for safe work practices. Each division also completes an annual self-assessment and/or an annual safety site visit and assessment.</p> <p>Republic's one-on-one process is designed for the supervisor and the frontline employee to have daily, weekly and monthly touch points. This process is in place to ensure all employees have open communication to address all potential risks within their workspace. The employees are encouraged to bring all concerns forward via this formal process and/or through informal conversations so that the supervisor can take the necessary action to mitigate the hazard. All employees are instructed to stop work if they identify a situation that puts themselves or the public at risk.</p>		2019	2020	2021	Divisions assessed	30	30	30
	2019	2020	2021							
Divisions assessed	30	30	30							

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

Standard	Description	Cross-Reference or Answer																																						
403-4	Worker Participation, Consultation, and Communication on Occupational Health and Safety	Safety committees are established with a combined participation of frontline employees and management to address all areas of concerns. Typically, these meetings are conducted monthly and periodically the participants rotate so that different perspectives are brought to the group for consideration.																																						
403-5	Worker Training on Occupational Health and Safety	<table border="1"> <thead> <tr> <th>Type of training</th> <th>Number</th> <th>Units</th> <th>Hours/course</th> <th>Total hours</th> </tr> </thead> <tbody> <tr> <td>Safety Refresher Training</td> <td>>22,000</td> <td>Drivers in 2021</td> <td>30</td> <td>>660,000</td> </tr> <tr> <td>New Driver Training</td> <td>4,025</td> <td>Drivers in 2021</td> <td>160</td> <td>644,000</td> </tr> <tr> <td>Train-the-Trainers</td> <td>689</td> <td>Trainers in 2021</td> <td>2.5</td> <td>1,722.5</td> </tr> <tr> <td>Crash and Injury Investigation</td> <td>239</td> <td>Supervisors in 2021</td> <td>2.5</td> <td>597.5</td> </tr> <tr> <td>Safety Core Competencies</td> <td>409</td> <td>Supervisors in 2021</td> <td>2.5</td> <td>1,022.5</td> </tr> <tr> <td>Total Hours of Safety Training in 2021</td> <td></td> <td></td> <td></td> <td>>1,307,343</td> </tr> </tbody> </table> <p>Safety Refresher Training is required by all safety-sensitive employees, which varied from month to month, but numbered more than 22,000 as of December 31, 2021. Contingent employees received safety training at time of assignment in 2021 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>	Type of training	Number	Units	Hours/course	Total hours	Safety Refresher Training	>22,000	Drivers in 2021	30	>660,000	New Driver Training	4,025	Drivers in 2021	160	644,000	Train-the-Trainers	689	Trainers in 2021	2.5	1,722.5	Crash and Injury Investigation	239	Supervisors in 2021	2.5	597.5	Safety Core Competencies	409	Supervisors in 2021	2.5	1,022.5	Total Hours of Safety Training in 2021				>1,307,343			
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403-9	Work-Related Injuries	<table border="1"> <thead> <tr> <th>2030 Safety Goals</th> <th>2014</th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2021</th> <th>2030 Goal</th> </tr> </thead> <tbody> <tr> <td>OSHA Total Recordable Incident Rate (TRIR)</td> <td>4.3</td> <td>3.9</td> <td>3.7</td> <td>3.7</td> <td>3.6</td> <td>2.0</td> </tr> <tr> <td>Fatalities – OSHA Reportable</td> <td>0</td> <td>0</td> <td>2</td> <td>1</td> <td>2</td> <td>0</td> </tr> <tr> <td>Fatalities – Operating Collection Vehicles</td> <td>0</td> <td>1</td> <td>2</td> <td>1</td> <td>0</td> <td>0</td> </tr> </tbody> </table> <p>We report the four most recent years as well as our first year of public reporting. We distinguish between employees and temporary labor (third-party contractors) in our records, both of which are included in our TRIR and fatality reporting here, and also included in our Safety Amplified (0 fatalities) and Incident Reduction (TRIR <2.0) goals.</p> <p>From 2014 through 2021, our safety performance has been 38% better than the industry average, based on OSHA data available at the time of this report's publication.</p> <table border="1"> <thead> <tr> <th>Lost-time injury frequency rate</th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2021</th> </tr> </thead> <tbody> <tr> <td>LTIFR</td> <td>6.11</td> <td>5.47</td> <td>6.21</td> <td>6.58</td> </tr> </tbody> </table> <p>Lost-time injuries frequency rate (LTIFR) calculated as (Number of lost-time injuries x 1,000,000) / Total hours worked in reporting period.</p>	2030 Safety Goals	2014	2018	2019	2020	2021	2030 Goal	OSHA Total Recordable Incident Rate (TRIR)	4.3	3.9	3.7	3.7	3.6	2.0	Fatalities – OSHA Reportable	0	0	2	1	2	0	Fatalities – Operating Collection Vehicles	0	1	2	1	0	0	Lost-time injury frequency rate	2018	2019	2020	2021	LTIFR	6.11	5.47	6.21	6.58
2030 Safety Goals	2014	2018	2019	2020	2021	2030 Goal																																		
OSHA Total Recordable Incident Rate (TRIR)	4.3	3.9	3.7	3.7	3.6	2.0																																		
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LTIFR	6.11	5.47	6.21	6.58																																				

GRI 404: Training and Education [2016]

Standard	Description	Cross-Reference or Answer																
3-3	Management of Training and Education	<p>Republic Services provides employees with training and education to positively impact the economy, environment and society. Employee development is at the forefront of our talent strategy, providing opportunities for people to improve their career prospects, drive durable and sustainable processes, act ethically and responsibly, and cultivate inclusive practices. A highlight of 2021 was the launch of the “Let’s Talk” series, focused on providing a platform for discussion and education around key human development topics.</p> <p>Republic Services is committed to investing in training and education for all of its employees. This investment spans from “day 1” targeted onboarding training based on critical roles and responsibilities to robust development opportunities that help our people learn and grow both personally and professionally.</p> <p>Enterprise initiatives are centrally managed with the support of a dedicated learning platform (LMS), while other, more localized projects and programs remain de-centralized.</p> <p>Training and education are typically designed in alignment with strategic business objectives and tie to a defined set of KPMs. As a standard practice, we leverage Kirkpatrick’s four levels of evaluation to determine impact on Reaction, Learning, Behavior, and Results to determine the effectiveness of learning initiatives.</p> <p>Training and education initiatives are linked to the organization’s strategic priorities. Governance is driven by a combination of enterprise-level goals and functional strategic business objectives. Governing principles identify the distribution of rights, responsibilities and decision-making parameters among the different participants in the organization and help align and engage important stakeholders around the strategic learning agenda. This is reviewed annually, quarterly or on an ad-hoc basis, depending on the evolution of the business and specific levels of impact.</p> <p>In 2021, we announced the establishment of the Republic Services Technical Institute (Tech Institute), the industry’s first diesel technician training program. While at the Tech Institute, trainees are paid while they receive free education during a 12-week training program. Upon completion, they are placed as full-time technicians with Republic, receiving relocation assistance where applicable. The program was developed in partnership with the U.S Department of Labor and Lincoln Tech, the leader in post-secondary education for auto, diesel and skilled trades.</p>																
404-1	Average Hours of Training Per Year Per Employee	<table border="1"> <thead> <tr> <th>Average Onboarding Training Hours per Role</th> <th>2019</th> <th>2020</th> <th>2021</th> </tr> </thead> <tbody> <tr> <td>Drivers - including classroom, skills activities and on-route training</td> <td>132</td> <td>132</td> <td>132</td> </tr> <tr> <td>Customer Service Agents</td> <td>120</td> <td>112</td> <td>112</td> </tr> <tr> <td>Leadership</td> <td>64</td> <td>25</td> <td>36</td> </tr> </tbody> </table> <p>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.</p>	Average Onboarding Training Hours per Role	2019	2020	2021	Drivers - including classroom, skills activities and on-route training	132	132	132	Customer Service Agents	120	112	112	Leadership	64	25	36
Average Onboarding Training Hours per Role	2019	2020	2021															
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Leadership	64	25	36															

Continued on following page

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

Standard	Description	Cross-Reference or Answer			
404-1 <i>Continued</i>	Average Hours of Training Per Year Per Employee	Ongoing Training	2019	2020	2021
		Average hours per FTE of training and development	16	16	16
		Average spend per FTE on training and development*		\$234	\$276
*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
3-3	Management of Diversity and Equal Opportunity	<p>We are proud of the diversity of our frontline workforce, as it closely represents the demographics of the communities we serve. We are committed to improving diverse representation across all levels of the Company. Our commitment to inclusion and diversity starts at the top of our organization, as outlined in our Mission of Supporting an Inclusive Culture (MOSAIC), established in 2013, and supported by the MOSAIC Council. The MOSAIC Council consists of leaders from across the Company who serve as ambassadors and thought partners for inclusion and diversity. This enables us to continue to develop new strategies and activities that are tied to the needs of our employees, customers and business with the goal of creating an even more inclusive work environment and diverse workforce.</p> <p>Our new values, launched in 2022, reinforce who we are today, and serve as an anchor for who we aspire to be. As an employer of people from all backgrounds, our core value of Human-Centered represents our commitment to embrace the unique potential and dignity of every person at Republic Services. We believe strongly that shared values unify us as a Company and help to establish expectations for how our employees treat one another and should expect to be treated. Our talent practices acknowledge the differences and similarities that we have, ensuring fair and equitable opportunities for all. We focus on building and developing leadership behaviors that drive mutual understanding, connectivity and empathy within our workforce, which we know helps drive inclusion in the workplace for our existing employees, and attract diverse talent to choose Republic as their future employer. Finally, we create opportunities for our diverse colleagues to develop communities to support their unique needs, and we offer this connectivity through our business resource groups, including Women of Republic, VALOR (Veterans, Advocacy, Learning, Outreach and Recruiting), the Black Employee Network (BEN) and Unidos.</p> <p>We have focused our diversity efforts on four key actions: building strong recruiting partnerships with diverse organizations, fostering company-wide trainings and discussions on diversity and inclusion, developing high-potential leadership programs for diverse professionals, and supporting our business resource groups. We have established progressive, forward-looking 2025 and 2030 goals for each of our four focus areas. Each of our business resource groups are extremely active and their respective events are well-attended by our employees.</p> <p>Republic Services is committed to making equitable, performance-based pay decisions without regard to race, ethnicity, sex or any other protected characteristic. By utilizing a market-based pay philosophy, and assessing performance and qualifications fairly without regard to any protected characteristic, we ensure that employees who are performing comparably are comparably paid. We also are committed to a workforce in which our employees' opportunities for growth and advancement are not limited by any protected characteristic. We continually review our policies and processes in this regard to confirm that we are maintaining the appropriate measures to ensure equal employment opportunity.</p>

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

Standard	Description	Cross-Reference or Answer					
405-1	Diversity of Governance Bodies and Employees	Gender (percent)	2019	2020	2021		
		Female share of Board of Directors	36.4	40.0	33.3		
		Female share of total workforce	18.6	18.5	19.5		
		Females share of all management positions, including junior, middle and senior management	21.6	22.8	23.5		
		Female share of junior management positions, i.e. first level of management	21.0	22.2	22.6		
		Female share in top management positions, i.e. maximum two levels away from the CEO or comparable positions	17.4	30.4	38.1		
		Female share of management positions in revenue-generating functions			12.9		
		Race and ethnicity (percent of total workforce)	2019	2020	2021		
		Non-white (excluding ethnically unknown)	47.3	46.5	47.2		
		Asian			1.5		
		Black or African American			19.4		
		Hispanic or Latino			23.5		
		White			52.7		
		Indigenous or Native			0.7		
		Other			2.2		
		Age (percent of total workforce)	2019	2020	2021		
		<30 years old	11.4	10.8	11.0		
		30-50 years old	49.8	49.0	48.0		
		>50 years old	38.8	40.3	41.0		
		Approximately 9.5% of our workforce are veterans.					

GRI 413: Local Communities [2016]

Standard	Description	Cross-Reference or Answer																											
3-3	Management of Local Communities	<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 positively 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. People residing in these areas experience lower graduation rates, increased incidents of crime, disproportionate health problems and unemployment or underemployment.</p> <p>To be the preferred environmental services company, 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 toward our goal to positively impact 20 million people by 2030 and the programs that will help us get there in our 2021 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>																											
413-1	Operations with Local Community Engagement, Impact Assessments, and Development Programs	<p>100% of our operations have local community engagement and/or local community development programs available to them via the three giving pathways described in GRI 3-3 Management of Local Communities:</p> <table border="1"> <thead> <tr> <th>Cumulative</th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2021</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>5.9 million</td> <td>20 million</td> </tr> </tbody> </table> <p>Republic gave approximately \$7.7 million back to the communities it served in 2021:</p> <table border="1"> <thead> <tr> <th></th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2021</th> </tr> </thead> <tbody> <tr> <td>Cash Contributions</td> <td>\$4,550,527</td> <td>\$4,766,545</td> <td>\$8,080,581</td> <td>\$5,278,398</td> </tr> <tr> <td>In-Kind Giving</td> <td>\$3,313,616</td> <td>\$3,491,441</td> <td>\$1,914,004</td> <td>\$2,413,258</td> </tr> </tbody> </table>	Cumulative	2018	2019	2020	2021	2030 Goal	People positively impacted	1.8 million	2.8 million	4.9 million	5.9 million	20 million		2018	2019	2020	2021	Cash Contributions	\$4,550,527	\$4,766,545	\$8,080,581	\$5,278,398	In-Kind Giving	\$3,313,616	\$3,491,441	\$1,914,004	\$2,413,258
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GRI 413: Local Communities [2016] (Continued)

Standard	Description	Cross-Reference or Answer
413-2	Impacts on Local Communities	2021 SASB Report: IF-WM-120a.2 2021 Sustainability Report: Environmental Justice Environmental Justice Statement (April 2022) Environmental Justice Statement (January 2022)

GRI 414: Supplier Social Assessment [2016]

Standard	Description	Cross-Reference or Answer
3-3	Management of Supplier Social Assessment	See response to GRI 308 .

GRI 415: Public Policy [2016]

Standard	Description	Cross-Reference or Answer																				
3-3	Management of Public Policy	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. 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.																				
415-1	Political Contributions	<table border="1"> <thead> <tr> <th>Reporting Currency: USD</th> <th>2018</th> <th>2019</th> <th>2020</th> <th>2021</th> </tr> </thead> <tbody> <tr> <td>Recipient: Federal lobbying (USA)</td> <td>247,000</td> <td>242,000</td> <td>245,330</td> <td>237,500</td> </tr> <tr> <td>Recipient: Local, regional, national political campaigns/organizations/candidates (USA)</td> <td>944,968</td> <td>611,824</td> <td>961,236</td> <td>785,345</td> </tr> <tr> <td>Recipient: Trade associations/Tax-exempt groups (USA)</td> <td>372,848</td> <td>426,440</td> <td>516,830</td> <td>516,830</td> </tr> </tbody> </table> <p>Significant contributions (above \$25,000 per year) include the following:</p> <ol style="list-style-type: none"> 1. West Front Strategies, Inc, in the amount of \$237,500. West Front Strategies represents Republic on legislative and regulatory matters via advocacy efforts at the federal level. 2. 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. 3. National Association of Manufacturers (NAM) in the amount of \$25,000. The NAM works for the success of the more than 12.8 million workers who make things in America. Their work is centered around four values that make our industry strong and America exceptional: free enterprise, competitiveness, individual liberty and equal opportunity. 	Reporting Currency: USD	2018	2019	2020	2021	Recipient: Federal lobbying (USA)	247,000	242,000	245,330	237,500	Recipient: Local, regional, national political campaigns/organizations/candidates (USA)	944,968	611,824	961,236	785,345	Recipient: Trade associations/Tax-exempt groups (USA)	372,848	426,440	516,830	516,830
Reporting Currency: USD	2018	2019	2020	2021																		
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Recipient: Trade associations/Tax-exempt groups (USA)	372,848	426,440	516,830	516,830																		

Appendix 2-7 Employees

	Female	Male	Not disclosed	Total
Number of full-time employees	6,808	28,318	12	35,138
Number of part-time employees	65	127	0	192
Total number of employees	6,873	28,445	12	35,330

Data based on headcount as of December 31, 2021. Employees from acquired companies are only included in cases where they were moved to our primary Human Capital Management system by the reporting date.

Appendix 302 Energy

302-1 Energy Consumption Within the Organization

	2018	2019	2020	2021
Non-Renewable Energy (GJ)	28,232,257	29,515,591	27,082,985	27,598,779
Renewable Energy (GJ)	3,321,447	3,099,265	4,108,440	4,458,824
Non-Renewable Energy (MWh)	7,842,294	8,198,775	7,523,051	7,666,327
Renewable Energy (MWh)	922,624	860,907	1,141,233	1,238,562

Reporting comprises vehicles, heavy equipment, facility natural gas consumption and electricity. For all categories, we used management and operational control to assign ownership and avoid double-counting. We report 100% of grid electricity consumption as non-renewable. See [GRI 2-4](#) for details regarding restatements.

302-2 Energy Consumption Outside of the Organization

	2018	2019	2020	2021
Non-Renewable Energy (GJ)	5,308,721	5,303,224	5,304,889	4,493,715
Renewable Energy (GJ)	5,155	5,042	5,083	4,687
Non-Renewable Energy (MWh)	1,474,645	1,473,118	1,473,580	1,248,254
Renewable Energy (MWh)	1,432	1,400	1,412	1,302

Reporting comprises upstream leased assets and upstream transportation and distribution, including subcontractor hauling and third-party hauling. For all categories, we used management and operational control to assign ownership and avoid double-counting. We report 100% of grid electricity consumption as non-renewable. See [GRI 2-4](#) for details regarding restatements.

302-3 Energy Intensity

	2018	2019	2020	2021
Energy (GJ)	31,553,704	32,614,855	31,191,425	32,057,603
Revenue (\$US Millions)	10,041	10,299	10,154	11,295
Energy Intensity (GJ/\$M)	3,142	3,167	3,072	2,838

We divided total energy used within the Company for our vehicles, heavy equipment, facility natural gas consumption and electricity in GJ, by revenue in millions of USD, as reported in our [10-K](#). See [GRI 2-4](#) for details regarding restatements.

Appendix 305 GHG Emissions

305-1 Direct (Scope 1) GHG Emissions

Emission Category (MTCO ₂ e)	2017	2018	2019	2020	2021
Total Scope 1 Emissions	14,909,948	14,978,559	14,818,003	14,071,744	13,643,797
Landfill Methane	13,082,920	13,246,039	13,025,196	12,416,889	11,944,825
Fleet & Heavy Equipment	1,734,908	1,567,983	1,579,387	1,420,533	1,450,956
Buildings	92,120	164,536	213,419	235,049	248,016
Biogenic Emissions	6,433,663	6,859,993	6,890,287	7,033,595	6,787,025

We report on the four most recent years as well as 2017, the baseline year for our Science Based Target Initiative-approved goal (SBTi) described in [GRI 3-3 Management of Emissions](#).

Scope 1 emissions 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 interact with 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 Emissions

There are five sources of biogenic carbon emissions that are relevant to Republic Services: 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. Biogenic emissions are reported in aggregate in the table in this disclosure and are treated separately from scope 1 in accordance with the GHG Protocol. 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); 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).

Sequestered Carbon and Avoided Emissions

Landfills act as a carbon sink, permanently, biologically sequestering carbon from municipal solid waste and removing it from the carbon cycle. Since the Greenhouse Gas Protocol does not currently allow for the accounting of avoided emissions, this total is not represented in our inventory. In 2021, Republic sequestered 27.43 MMTCO₂e, as calculated using a 2008 U.S. EPA waste characterization study.

Republic offers a number of products and services today that enable our customers to avoid their emissions, most notably, materials recovery and recycling. Using the U.S. EPA's Waste Reduction Model (WARM) v15, we have estimated the full lifecycle emissions from the 6.3M short tons of recycled commodities and 1.02M short tons of compost that we manage, to be a negative 18.48 MMTCO₂e. Lifecycle emissions include upstream mining, processing and transportation of materials that enter the waste stream, transportation and recovery/processing of commodities/compost by companies like Republic, as well as, downstream processing, transportation, and re-manufacturing where applicable.

See [GRI 2-4](#) for details regarding restatements.

305-2 Energy Indirect (Scope 2) GHG Emissions

Emission Category (MTCO ₂ e)	2017	2018	2019	2020	2021
Location-based	266,901	235,243	247,943	248,997	218,286
Market-based	264,877	229,890	260,336	250,621	220,053

We report on the four most recent years as well as 2017, the baseline year for our Science Based Target Initiative-approved goal (SBTi) described in [GRI 3-3 Management of Emissions](#). Indirect emissions sources include electricity and estimated natural gas used in buildings and facilities. See [GRI 2-4](#) for details regarding restatements.

305-3 Other Indirect (Scope 3) GHG Emissions

Emission Category (MTCO ₂ e)	2017	2018	2019	2020	2021
1. Purchased goods and services	1,953,184	1,928,122	2,019,427	1,807,169	1,916,475
2. Capital goods	447,954	490,155	516,148	494,760	489,554
3. Fuel- and energy-related activities	465,206	465,750	471,946	464,094	511,926
4. Upstream transportation and distribution	344,432	461,778	462,829	467,489	401,307
5. Waste generated in operations	77,668	71,386	90,767	117,916	111,016
6. Business travel	11,641	9,122	10,200	4,282	4,747
7. Employee commuting	167,108	164,658	161,480	127,826	134,510
8. Upstream leased assets	3,989	5,006	4,598	2,995	2,730
Scope 3 Total	3,471,182	3,595,978	3,737,395	3,381,997	3,572,266

We report on the four most recent years as well as 2017, the baseline year for our Science-Based Target Initiative-approved goal (SBTi) described in [GRI 3-3 Management of Emissions](#). Republic includes scope 3 emissions for the eight 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 throughout our value chain from fuel consumption, purchased electricity and landfill emissions. HFC emissions from refrigerant use, PFCs, NF₃ and SF₆ are not included, as Republic does not interact with these compounds at a materially reportable level.

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

Although we could not identify an industry-wide consensus regarding the accounting of emissions from waste we collect from customers and dispose of at third-party facilities, we have made the decision to include those emissions in category 1 (Purchased goods and services).

Continued on following page

305-3 Other Indirect (Scope 3) GHG Emissions (Continued)

Non-EEIO methodology notes

Category 3 (Fuel- and energy-related activities not included in scope 1 or 2) – We include this category to represent transmission and distribution (T&D) losses from fuels and electricity we consume. These calculations began by totaling activity data for each scope 1 fuel type and scope 2 electricity consumption. We multiplied these totals by their relevant specific emission factors. For fuels, these factors came from UK Defra / DECC 2021 Conversion Factors for Company Reporting; and/or electricity T&D loss emission factors came from the IEA emission factors, as recommended by Defra/DECC.

Category 4 (Upstream transportation and distribution) – Republic maintains detailed cost data for third-party hauler and subcontract collection services that it uses to support its own collection services. We completed an assessment of fuel spend as a percent of total spend on third-party hauling. We used that assessment to determine the quantity of fuel consumed by the third-party fleets using the 2021 DOE national average for Ultra Low Sulfur Diesel (ULSD). We calculated upstream T&D loss emissions from these total gallons of third-party fuel. We also calculated fuel used by subcontract collection vehicles. We converted the fuel spend estimate to gallons of diesel using the 2021 DOE national average for ULSD, which we then used to calculate GHG emissions. We used U.S. EPA Climate Leaders: Emission Factors for Greenhouse Gas Inventories, 2020 to calculate the emissions.

Category 6 (Business travel) – Annual data for air travel, rail travel and rental car travel was provided by Republic's travel agency. Air travel was provided by leg, showing cabin class and distance, which we classified as short- (<300 mi), medium- (300-2300 mi) and long-haul (>2300 mi); and we applied UK DEFRA 2021 emissions factors. Rail travel data was provided as distance traveled and we applied U.S. EPA Climate Leaders: Emission Factors for Greenhouse Gas Inventories, 2020. We received fuel volumes from rental car companies and applied U.S. EPA Climate Leaders: Emission Factors for Greenhouse Gas Inventories, 2020.

Category 7 (Employee commuting) – Republic Services calculates employee commuting based on a US EPA assumption of 41 miles round trip per eligible employee driven in a passenger car. For 2021, many of our non-frontline workers conducted their roles remotely for the duration of the year, which we accounted for in our determination of number of employees commuting each day. We used the number of employee commuting days to calculate total mileage. We then applied EPA Table 10 Emission Factor to total mileage.

Category 8 (Upstream leased assets) – Our upstream leased assets include data centers that have some predetermined agreements in place to avoid emissions. For example, our Switch data center is powered by 100% renewable energy. We apply an emissions factor of 0 for renewable energy. For non-renewable energy, we apply the applicable EPA eGrid factor based on facility location.

305-4 GHG Emissions Intensity

Emission Category (MTCO ₂ e)	2017	2018	2019	2020	2021	Percent Change ('17-'21)
Revenue (\$US Millions)	10,042	10,040	10,299	10,154	11,295	12
Scope 1 Emissions (MTCO ₂ e)	14,909,948	14,978,559	14,818,003	14,071,744	13,643,797	-9
Scope 1 MTCO ₂ e/\$M Revenue	1,485	1,492	1,439	1,386	1,208	-19
Scope 2 Emissions (MTCO ₂ e)	264,887	229,890	260,336	250,621	220,053	-17
Scope 2 MTCO ₂ e/\$M Revenue	26	23	25	25	19	-26
Scope 1&2 Emissions (MTCO ₂ e)	15,174,825	15,208,449	15,078,339	14,322,365	13,863,850	-9
MTCO ₂ e/\$M Revenue	1,511	1,515	1,464	1,411	1,227	-19

We report on the four most recent years as well as 2017, the baseline year for our Science-Based Target Initiative-approved goal (SBTi) described in [GRI 3-3 Management of Emissions](#). See [GRI 2-4](#) for details regarding restatements.

305-5 Reduction of GHG Emissions

Scope (MTCO ₂ e)	2017	2018	2019	2020	2021	Percent Change ('17-'21)
Scope 1	14,909,948	14,978,559	14,818,003	14,071,744	13,643,797	-9
Scope 2	264,877	229,890	260,336	250,621	220,053	-17
Total	15,174,825	15,208,449	15,078,339	14,322,365	13,863,850	-9

We report on the four most recent years as well as 2017, the baseline year for our Science-Based Target Initiative-approved goal (SBTi) described in [GRI 3-3 Management of Emissions](#). Totals do not add due to rounding. See notes in [Appendix 305-4](#), above, and see [GRI 2-4](#) for details regarding restatements.

305-7 Nitrogen Oxides (NO_x), Sulfur Oxides (SO_x), and Other Significant Air Emissions

Air Emissions (metric tons)	2019	2020	2021
NO _x (excluding N ₂ O)	1,408	1,466	1,413
SO _x	340	354	341
Volatile organic compounds (VOCs)	33	35	34
Hazardous Air Pollutants (HAPs)	53	55	53

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. See [GRI 2-4](#) for details regarding restatements.