Welcome to your CDP Climate Change Questionnaire 2022

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

At Johnson Controls International plc, headquartered in Cork, Ireland, we've been making buildings smarter and more sustainable since 1885, and our capabilities, depth of innovation experience, and global reach have been growing ever since. Today, we offer the world's largest portfolio of building products, technologies, software, and services; we put that portfolio to work to transform the environments where people live, work, learn and play. Our offering includes a wide range of world-class heating, ventilation and air conditioning (HVAC) equipment and systems, control systems, security systems, fire detection systems, fire suppression systems, equipment and services. We believe our leadership in sustainability creates long-term benefits for our customers, employees, shareholders and society as a whole.

The climate crisis is the most pressing environmental challenge of our time, and we are stepping up to do our part. Johnson Controls has a special responsibility to be a leader in addressing climate change, given that almost 40 percent of global CO2 emissions come from buildings. That's why, as a company, we have committed to net zero Scope 1 and 2 emissions by 2040 and are developing products and services that contribute to low carbon buildings and reduced emissions. We are firmly committed to helping our customers and others around the world pursue their net zero carbon goals, ensuring healthy people, healthy places and a healthy planet.

In July 2021, we launched OpenBlue Net Zero Buildings as a Service, a turnkey solution to deliver decarbonization outcomes for our customers' building asset portfolios which combines our suite of building technology applications with sustainability innovations to track and analyze greenhouse gas emissions.

In addition to helping our customers achieve net zero, Johnson Controls is continuing to take significant steps to further improve our own environmental impacts. Within our operations, by 2030, the company has committed to cut its Scope 1 and 2 emissions by 55 percent and reduce Scope 3 emissions by 16 percent. These ambitious 2030 emissions reduction targets have been approved by the Science Based Targets initiative. The Johnson Controls sustainability strategy and commitments are aligned to climate action and have a measurable

impact across our products and services, supply chain, employee and external engagement, and governance.

And we are leading the way in supplier sustainability, too. We are proud to have been honored by CDP as a Supplier Engagement Leader. Sustainability is now equal to cost, quality and delivery in supplier performance evaluations. Our Sustainability Rating includes waste reduction, energy use, water consumption and diverse business involvement. We partnered with EcoVadis to adopt a systematic ratings program to evaluate suppliers based on their environmental, business, and social practices. We also formed a Supplier Council to share sustainability best practices, evaluate and launch new sustainability programs, and contribute to our long-term strategy for supplier engagement.

We are proud to be recognized as one of the World's Most Ethical Companies, to be ranked number one in our industry group and number 12 overall as one of the 100 Most Sustainable Corporations in the World.

We actively engage with leaders around the world to address urgent climate action. In 2021 our CEO, George Oliver joined President Joe Biden for the president's virtual Leaders Summit on Climate. The two-day summit featured world leaders, other governmental officials and business leaders. Oliver, the only industrial CEO to present, said Johnson Controls fully supports efforts to do its part to help the United States meet its goal to cut emissions by about 50 percent by the end of the decade. Oliver stated, "In my role as Chairman and CEO of Johnson Controls, a global leader in smart, healthy and sustainable buildings, we're eager to drive harder and faster to cut the 40% of greenhouse gases that come from buildings." Oliver also testified in front of the U.S. Senate Budget Committee in 2021 at a hearing on climate change. In his statement to the committee, Oliver warned that inaction on climate change was intolerable and urged that "The United States and the international community must aggressively reduce GHG emissions."

We've continued to affirm our leadership in sustainable finance over the last two years. In September 2021, we became the first S&P 500 industrial company to publish both an integrated sustainable finance framework and issue a Sustainability-Linked Bond. Through this issuance, we reaffirm our leadership in sustainable finance. In 2020, we completed our inaugural green bond and, in 2019, we became one of the first industrial companies in the US syndicated loan market to tie our senior revolving credit facilities to specific sustainability metrics.

We are proud to share this TCFD-aligned CDP report of our progress to date on climate action.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for

Reporting year	October 1, 2020	September 30, 2021	Yes	3 years

C0.3

(C0.3) Select the countries/areas in which you operate.

Argentina
Australia
Austria
Bahrain
Belgium
Brazil
Canada
Chile
China
China, Macao Special Administrative Region
Colombia
Costa Rica
Czechia
Denmark
Finland
France
Germany
Hong Kong SAR, China
Hungary
India
Indonesia
Ireland
Isle of Man
Israel
Italy
Japan
Kazakhstan
Kuwait
Luxembourg
Malaysia
Mexico
Netherlands
New Zealand
Norway
Oman
Panama
Peru
Philippines
Poland
Portugal

Qatar
Republic of Korea
Romania
Russian Federation
Saudi Arabia
Singapore
Slovakia
South Africa
Spain
Sweden
Switzerland
Taiwan, China
Thailand
Turkey
Turkmenistan
Ukraine
United Arab Emirates
United Kingdom of Great Britain and Northern Ireland
United States of America
Uruguay
Uzbekistan
Viet Nam

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	IE00BY7QL619

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board-level committee	The Board of Directors approves and oversees the implementation of the Company's mission, vision and values. The Governance and Sustainability Committee (Committee) provides oversight of our ESG programs and goals, sustainability management, sustainability risks, sustainability trends and environmental health and safety, receiving quarterly briefings on our progress. The Committee includes members with experience in leading, overseeing and /or otherwise having responsibility for corporate sustainability strategy and executive level initiatives. The Committee receives quarterly progress updates on the Company's progress towards its climate related goals. It regularly receives updates on key climate-related areas of focus, including the Company's sustainability strategy, key sustainability initiatives, emerging climate-related regulations and the Company's climate-related reporting. For example, management reviewed and discussed with the Committee the Company's efforts to develop and implement a supplier sustainability framework, the Company's sustainability organizational structure, the execution of the Company's sustainable finance offerings and initiatives focused on water reduction. During these discussions the members of the Governance and Sustainability Committee provided oversight, guidance and feedback on these issues, guiding management in developing and executing its sustainability strategy. We have taken the initiative to build on our 10 years of third-party verified metrics and methodologies by establishing an internal ESG Reporting Readiness SteerCo. The board of directors has requested regular briefings from this work on our internal organization and preparedness for investment-grade ESG disclosure. In addition, the Compensation and Talent Development Committee has integrated environmental, social and governance factors, including climate-related issues, into the annual goals of our executive team. This includes carbon and water emissions reduction goals tied to the Company's long term reduction targets. This linkage

	ensures sustainability is embedded into our products, services and culture. These goals are reviewed and approved by the Compensation and Talent Development Committee and included as part of the individual performance goals of +10/-25 percent used to modify executive compensation.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	The Governance and Sustainability Committee of the board are apprised at least quarterly of sustainability and environmental performance by our Chief Sustainability Officer. The full Board also reviews matters related to the Company's sustainability strategy at least annually, including the adaptation of the Company's products and services to deliver decarbonization solutions and the Company's internal sustainability efforts. In addition, starting in 2019, the board reviews and signs our Non-Financial Report. The Non-Financial Report addresses environmental, social and governance issues, including climate. The Governance and Sustainability Committee meets quarterly and reviews the Company's overall sustainability strategy, metrics, targets, goals and progress, as well as the development of new sustainability-based targets. The Governance and Sustainability Committee regularly receives updates on key climate-related areas of focus, including the Company's sustainability strategy, key sustainability initiatives, emerging climate-related regulations and the Company's climate-related reporting. For example, management reviewed and disused with the Governance and Sustainability Committee the Company's net zero carbon transition initiatives, the Company's efforts to develop and implement a supplier sustainability framework, the Company's sustainability organizational structure, the execution of the Company's sustainable finance offerings and initiatives focused on water reduction. During these discussions the members of the Governance and

		Sustainability Committee provided oversight, guidance and feedback on these issues, The Compensation and Talent Development Committee has implemented additional accountability for climate-related issues by integrating environmental, social and governance factors, including climate-related issues, into the annual goals of our executive team. These goals are reviewed and approved by the Compensation and Talent Development Committee and included as part of the individual performance goals of +10/-25 percent used to modify executive compensation. Our CEO regularly reports on progress toward these goals to our board of directors and these goals are reviewed and considered by the Compensation and Talent Development Committee when applying the individual modifier to the compensation of our executives.

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues
Row 1	Yes	The Board of Directors regularly assesses the composition and skills of its members with the goal to maintain a board that is strong in its diversity, vision, strategy and business judgment and possesses a robust collective knowledge in a wide variety of topics. The Company assesses the competence of its directors in various areas based on their professional background and other experience, including whether the director led or had oversight or responsibility for a particular subject matter. With respect to climate, the Company has assessed competence based on whether its directors have had direct experience, leadership, or oversight of environmental, sustainability and/or climate matters in their professional backgrounds. This experience can include executive leadership and/or responsibility for corporate sustainability strategy, reporting and/or achievement of sustainability related goals and targets. Other relevant experience can include direct engagement and/or involvement in climate related issues and policy. In addition, the Company will also consider special knowledge, skills or leadership in environmental, sustainability and/or

		climate matters outside the corporate environment, including educational background, thought leadership, and other forms of engagement or involvement on sustainability or climate-related issues.

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Name of the position(s) and/or committee(s)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Sustainability Officer (CSO)	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

The Vice President and Chief Sustainability and External Relations Officer reports to the CEO and is a member of the Executive Committee. The Executive Committee is comprised of senior executives responsible for all our major corporate functions, including our Vice President, Chief Sustainability and External Relations Officer, all the Presidents of our businesses, Chief Human Resources Officer, and Chief Supply Chain Officer. The Executive Committee reviews, approves and monitors our sustainability goals and commitments, overseeing both annual targets as well as long term planning.

On a quarterly cadence, the Vice President and Chief Sustainability and External Relations Officer chairs our ESG, Policy, and Regulatory Leadership Committee. This Leadership Committee reviews quarterly performance of our ESG targets, reviews strategic programs, and reviews and approves any new ESG commitment to then be approved by the Executive Committee. The ESG, Policy, and Regulatory Leadership Committee consists of senior leaders across our businesses, functions, and regions. The leadership committee ensures that clear responsibility for achieving our targets is assigned and that colleagues are held to account for progress. The leadership committee also develops policies for internal governance as well as for external advocacy. Johnson Controls is proud to be a voice in favor of public policy that advances sustainability and resource conservation.

As noted above, sustainability and diversity performance goals are required for the top leaders of our company, including our CEO and executive team. Integrating sustainability into the goals of our executive team and linking them to compensation ensures sustainability, including climate-related issues, are embedded into our products, services and culture. Moreover, executives are called upon to cascade specific sustainability goals to their teams and to date

more than 13000 colleagues have specific performance measures tied to sustainability commitments.

The CSO formally reviews and approves the organization's annual sustainability reports including the Non-Financial Report, the UN Global Compact Communication on Progress, our annual Sustainability Report which is in accordance with Global Reporting Index (GRI) Standards and SASB Standards, and the CDP disclosures.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	Sustainability is embedded into our products, services, culture and the performance goals of employees at every level of our organization, starting at the top. The Compensation and Talent Development Committee has integrated environmental, social and governance factors, including climate-related issues, into the annual goals of our executive team. These goals are reviewed and approved by the Compensation and Talent Development Committee and included as part of the individual performance goals of +10/-25 percent used to modify executive compensation. Our CEO regularly reports on progress toward these goals to our board of directors and these goals are reviewed and considered by the Compensation and Talent Development Committee when applying the individual modifier to the compensation of our executives. Senior leaders are directed to cascade these goals. More than 13,000 employees have sustainability embedded in their annual performance goals.

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive	Type of incentive	Activity incentivized	Comment
Corporate executive team	Monetary reward	Emissions reduction target	Sustainability and diversity performance goals are required for the top leaders of our company, including our CEO and executive team. These goals are included as part of the individual performance modifier of +10/-25 percent used to adjust executive compensation.

		Energy reduction target Efficiency target	Integrating sustainability into the goals of our executive team and linking them to compensation ensures sustainability is embedded into our products, services and culture. Goals include those that drive our sustainability strategy and commitments, which include emissions reduction targets, energy reduction targets and efficiency targets. Leaders cascade our sustainability goals and employees across the company are embedding them into their annual goal setting process.
Chief Executive Officer (CEO)	Monetary reward	Emissions reduction target Energy reduction target Efficiency target	Sustainability and diversity performance goals are required for the top leaders of our company, including our CEO and executive team. These goals are included as part of the individual performance modifier of +10/-25 percent used to adjust executive compensation. Our CEO reports on progress toward these goals monthly to our board of directors. Integrating sustainability into the goals of our executive team and linking them to compensation ensures sustainability is embedded into our products, services and culture. In addition, our CEO Sustainability scorecard includes greenhouse gas emissions reduction and other climate-related targets.
Other, please specify Plant manager	Monetary reward	Emissions reduction target Energy reduction target Efficiency target	Our plant managers have a monetary incentive to achieve a set of goals at the plant level, which includes energy and waste reduction targets. We provide monetary and company recognition to the Operations Leadership that lead our Johnson Controls Manufacturing System (JCMS) for our global manufacturing locations globally. JCMS includes requirements across nine principles, including Environment & Sustainability. This program requires plant operational and maintenance leadership to identify energy reduction and conservation projects and such, will be included as a metric in their individual performance measurement.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?

Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	3	
Medium-term	3	10	
Long-term	10	30	

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

Exclusively for purposes of this report, Johnson Controls defines a substantive impact when identifying or assessing climate-related risks based on a mix of qualitative and quantitative assessments in line with our ERM framework. These assessments include potential impact (assuming minimal risk management efforts) measured in terms of the following factors: people, environmental, image/ reputation, regulatory/ legal, and financial (profit) as well as the likelihood of the impact. For example, a major risk is defined within the ERM framework as an event causing a quantitative decline in financial performance, such as a 5 – 10% decrease in sales or profit, together with the occurrence of other qualitative factors, such as a major impact on market position and the ability to meet the Company's near-term strategic objectives, and the probability of occurrence is between 10 and 25%. The mix of these quantitative or qualitative factors may result in identifying a substantive impact at a lesser or greater quantitative threshold, depending on the nature of the impact and its overall probability. For example, based on our fiscal 2021 revenue, a substantive impact would represent $1.2B impact on revenues or a $80 million impact on our profit, subject to the probability of the event and other non-qualitative factors listed above.

"Substantive" as used in this report is used within the context of the CDP reporting framework and is different than the definition in the context of filings with the Securities and Exchange Commission. An issue deemed substantive for purposes of this report may not be considered substantive or material for reporting purposes under U.S. federal securities laws, including in filings with the Securities and Exchange Commission.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered

Direct operations

Upstream

Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

More than once a year

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

As a global multi-industrial company, we face a range of risks, including general economic, credit and capital market conditions risks, regulatory risks, global climate change risks, and several other risks that are fully listed and explained in our fiscal 2021 Form 10-K. The company's Enterprise Risk Management (ERM) process provides the enterprise with a common framework and terminology to ensure consistency in identification, reporting, and management of key risks. It also informs the strategic planning process and includes formal processes to identify and document the key risks to Johnson Controls as perceived by a variety of stakeholders within the Company.

A Risk Committee assesses risks throughout the year and escalates any new risks to the Executive Committee. The Governance and Sustainability Committee of the board of directors oversees the ERM process. In addition, we have key teams in place to oversee and advise on our sustainability risks and opportunities including the Board's Governance and Sustainability Committee, the Executive Committee, and the ESG Policy, Regulatory Leadership Committee.

Identification:
Climate-related risks are explicitly integrated into our multi-disciplinary Enterprise Risk Management Process. Due to the importance of climate-related issues, we also engage in a focused risks and opportunities process specific to climate-related risks and opportunities that is aligned with our overall ERM framework. Within the last year, the Company held a climate-related risks and opportunities process, consisting a series of meetings and discussions with company senior leadership from sustainability, legal, finance, strategy, operations, enterprise property, supplier sustainability, regulatory affairs, ethics and compliance, procurement and environment, health and safety.

Transition and physical risk scenario analyses are aligned to our short-term, medium-term and long-term time horizons. We conducted scenario analyses for our transition risks aligned to a Low Carbon World, distinguishing between a 1.5 degree and 2 degree scenario where possible. Assumptions for evaluating transition risks were based on IEA NZE 2050, IEA SDS and IEA APS scenarios, comparing differences in expected political, technology, economic and social factors and the potential impact on our business. We also conducted a physical climate risk scenario analysis looking at the

impact to our key suppliers and our own operations in the case of temperature increase scenarios of 1.5 degrees (RCP 2.6), and greater than 2 degrees (RCP 4.5). We analyzed the acute and chronic related physical risks of these scenarios to our supply chain.

Assessment:
We identify, assess and respond to climate-related risks and opportunities across the value chain - in our direct operations, upstream and downstream. Johnson Controls recognizes that climate-related issues can affect several important aspects of its financial performance, condition and strategy, both now and in the future. Johnson Controls therefore utilizes a mix of qualitative and quantitative assessments, including climate-related scenario analyses, in determining whether climate related issues have a substantive impact on its financial performance, condition and strategy.

We used the climate-related scenario analyses and worked with teams across the company and external consultants to assess the impact of transition risks including policy and legal, technology, market and reputation, physical risks including acute and chronic, and opportunities including those afforded by resource efficiency, energy source, our products/services, markets and resilience. We applied our company's Enterprise Risk Management scoring to each, determining the inherent impact, management effectiveness and thus the residual impact.

We assessed the likelihood of significant impact against our short, medium and long-term time-horizons. When assessing risks and opportunities, the ERM framework considers residual risk which is the risk exposure after considering inherent risk alongside management’s overall effectiveness in managing the risk, including the people, process, controls, technology, policies, procedures, analytics, metrics, monitoring, reporting, communication and organization currently in place.

Response:
We used the analysis to identify the most critical climate-related risks and opportunities along with strategies for increasing our company's resiliency through proactive strategies and management actions. After climate related risks and opportunities have been identified and assessed, they are prioritized according to impact and likelihood. The results of this analysis is presented to and reviewed by members of senior management. Any key risks that are identified through our ERM process or our focused climate-risk assessment process are integrated into our ERM framework and management process. The results of ERM assessment are presented to the board. Our ERM process is also linked to the strategic planning process, compliance, internal auditing, and global sustainability framework.

We took significant action in light of our findings. For example, we committed to dedicating at least 75% of our new product R&D to solving climate change and advancing sustainability. We also are building a sustainability screen to inform all of our new capital investments.

Understanding that buildings account for some 40% of global greenhouse gas emissions and that therefore there is no decarbonizing the climate without decarbonizing buildings, we set out to build public awareness of the need to address buildings in climate change policy. We developed a short message and pushed it out on the TED Talk platform (link) and our CEO drove home the message in numerous forums including at President Biden's White House Climate Change Summit (April, 2021) and in US Senate Testimony (citation).

We also decided to bring whole new products to market that are critical to achieving deep decarbonization. Heat pumps, for example are extraordinary machines that heat and cool and that can deliver many multiples of useful energy compared to the energy they consume. We invested in and dramatically expanded our heat pump product portfolio.

In addition, we have key teams in place to oversee and ensure management actions on our climate-related risks and opportunities. They include our Executive Committee, Executive Leadership Team, the ESG Policy, Regulatory Leadership Committee, Sustainable Finance Committee, Risk Management Committee, the ESG Global Council, the Purchasing Leadership Team, and specialized committees and management groups.

In short, in every aspect of our business, our strategy and our leadership is shaped and informed by the risks and opportunities we see posed by climate change.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Many of Johnson Controls' products consume energy and use refrigerants, for these products up to 95 percent of the lifecycle emissions can be associated with energy consumption and refrigerant emissions. Regulations which seek to reduce GHG emissions present a significant risk to our global products business, predominantly our HVAC solutions, if Johnson Controls does not adequately prepare its product portfolio. These regulations tend to be implemented under global, national, and sub-national climate objectives or policies, and target the global warming potential (GWP) of refrigerants, equipment energy efficiency, and the combustion of fossil fuels as a heating source. Specific Johnson Controls products impacted by these regulations include residential and light commercial air conditioners, heat pumps, and furnaces, and commercial rooftop units, chillers, and air handling equipment.

		Current risks evaluated include: - Carbon pricing mechanisms - Enhanced emissions-reporting obligations - Mandates on and regulation of existing products and services - Increased operating costs (e.g., higher compliance costs, increased materials costs) - Increased costs and/or reduced demand for products and services resulting from fines and judgments - Restriction of markets due to inability to comply / cost of redesign to comply
Emerging regulation	Relevant, always included	We continually monitor, review and assess proposed and incoming regulatory change as part of our ERM framework to mitigate and manage potential impacts on our business. Regulations on the GWP of refrigerants, equipment energy efficiency and the combustion of fossil fuels as an energy source are expected to become more stringent in the short (2025) and medium (2030) term. Regulations which seek to reduce GHG emissions present a significant risk to our global products business, predominantly our HVAC solutions, if Johnson Controls does not adequately prepare its product portfolio. These regulations tend to be implemented under global, national, and sub-national climate objectives or policies, and target the global warming potential (GWP) of refrigerants, equipment energy efficiency, and the combustion of fossil fuels as a heating source. Specific Johnson Controls products impacted by these regulations include residential and light commercial air conditioners, heat pumps, and furnaces, and commercial rooftop units, chillers, and air handling equipment. As a public company, Johnson Controls is subject to enhanced emissions-reporting obligations, Potential impacts can include increased burdens on our ability to fully comply with emerging ESG reporting obligations including proposed SEC climate disclosure rules, the proposed EU Corporate Sustainability Reporting Directive, UK mandatory ESG disclosures, as well as negative impacts to our reputation and business if we do not demonstrate leadership and engagement with respect to climate and other ESG policies. Emerging risks evaluated include: - Carbon pricing mechanisms - Enhanced emissions-reporting obligations - Mandates on and regulation of existing products and services - Exposure to litigation - Increased operating costs (e.g., higher compliance costs, increased materials costs) - Increased costs and/or reduced demand for products and services resulting from fines and judgments

		- Restriction of markets due to inability to comply / cost of redesign to comply
Technology	Relevant, always included	We expect a shift to low-to-zero emissions solutions driven by regulation or market-based emissions policies. This shift presents a risk to Johnson Controls' portfolio if we do not continue to develop and adapt our products and solutions, namely as it relates to global warming potential (GWP) refrigerants, non-vapor compression and hybrid cooling technology, heating fuel GHG emission limits, and HVAC equipment minimum energy performance. Risks evaluated include: - Substitution of existing products and services with lower emissions options - Unsuccessful investment in new technologies - Transitioning to lower emissions technology - Reduced demand for products and services - Research and development expenditures in new and alternative technologies - Capital investments in technology development - Costs to adopt/deploy new practices and processes
Legal	Relevant, always included	We expose ourselves to increased costs and/or reduced demand for products and services if we did not maintain internal controls and/or act in accordance with rules, regulations, ethical standards, professional code of conduct and procedures, causing little or no effect on the organization’s reputation, earnings and/or shareholder equity (e.g., FCPA, Antitrust / Anti-competition, trade regulations, Sarbanes-Oxley controls, improper handling of hazardous materials). It is a risk to our business if we did not comply with applicable foreign regulations and specific tariffs. Risks evaluated include: - Exposure to litigation - Increased legal costs (e.g., higher compliance costs, litigation costs) - Increased costs and/or reduced demand for products and services resulting from fines and judgments - Increased legal costs due to regulatory complexity.
Market	Relevant, always included	We expect a shift to low-to-zero emissions solutions driven by investor, customer and consumer demands (see Opportunity 3). This shift presents a risk to Johnson Controls portfolio if we do not continue to develop and adapt our products and solutions, namely as it relates to delivering Net Zero Buildings as a Service, OpenBlue connected solutions and other of our industry-leading products and solutions that help our customers solve for zero. Risks evaluated include: – Changing customer behavior

		– Uncertainty in market signals – Increased cost of raw materials (supply chain risk)
Reputation	Relevant, always included	New or enhanced products may not satisfy customer preferences and product failures may cause customers to reject our products. As a result, these products may not achieve market acceptance and our brand image could suffer. An event, series of events, or policies that adversely impacts the image of the organization, or possibly its branding strategy, web strategy, pricing strategy, lead generation or industry that impacts our ability to effectively attract customers and sustain demand for the company's products or services (e.g., poor brand management). We expose ourselves to risk if we ignore the environmental and social impact of the organization's operations or fail to meet publicly declared environmental or social goals or targets. This could tarnish our brand and reputation or lead to a loss of investors or investment or impairment of goodwill. Risks evaluated include: – Shifts in consumer preferences – Increased stakeholder concern or negative stakeholder feedback
Acute physical	Relevant, always included	If our operations, particularly at our manufacturing facilities, were to be disrupted as a result of significant equipment failures, natural disasters, power outages, fires, explosions, adverse weather conditions, public health crises, or other reasons, we may be unable to effectively respond to alarm signals, fill customer orders and otherwise meet obligations to or demand from our customers, which could adversely affect our financial performance.– Increased severity and frequency of extreme weather events such as cyclones or floods at our facilities. Risks evaluated include: – Increased likelihood and severity of wildfires at our facilities – Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions) – Reduced revenue and higher costs from negative impacts on workforce (e.g., health, safety, absenteeism) – Increased operating costs – Increased capital costs – Increased insurance premiums and potential for reduced availability of insurance on assets in "high-risk" locations
Chronic physical	Relevant, always included	Climate change is expected to lead to increased drought in dry areas and the expansion of dry areas. We conducted a detailed analysis with the World Resources Institute's Aqueduct™ tool to identify which of our locations are in water stressed areas. Risks evaluated include: – Changes in precipitation patterns and extreme variability in weather patterns – Rising mean temperatures

		– Rising sea levels resulting in these impacts to our locations: – Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions) – Increased operating costs – Increased capital costs

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Risk 1

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Emerging regulation

Mandates on and regulation of existing products and services

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

For over 40 years, national and sub-national governments have set regulations in response to concerns about energy security and environmental protection, including standards targeting building products. One particular regulatory issue impacting Johnson Controls concerns the types of refrigerants we use in our heating, ventilation, air conditioning, and refrigeration (HVACR) products. In recent years, refrigerant regulations have shifted from limiting their ozone depleting potential (ODP) to also limiting their global warming potential (GWP). Global targets for limiting the use of high GWP hydrofluorocarbons (HFCs) – the incumbent refrigerant in much of our HVAC portfolio today – were set in the 2015 Kigali Amendment to the Montreal Protocol.

National and subnational governments have already begun establishing refrigerant regulations in response to the Kigali Amendment. By 2025, we expect that all new HVAC equipment sold in developed economies (North America, Europe, and mature Asian countries) will need to use low GWP refrigerants. Some of these governments are

already considering regulations in anticipation of the next refrigerant transition, to ultra-low GWP refrigerants.

Developing economies are provided more time to phase out the use of HFCs: under the Kigali Amendment phase down schedule, significant reductions in HFC consumption are not required until at least 2035. While some of these countries encourage the use of low GWP refrigerants, to date few have proposed mandatory regulations that would have a material impact on our portfolio.

Emerging refrigerant regulations are an inherent risk to Johnson Controls; if we do not adequately anticipate and respond to these regulations, portions of our HVACR portfolio will be unavailable for sale in accompanying jurisdictions until they are made available with compliant low GWP refrigerants. This would result in a significant loss of revenue.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

4,000,000,000

Potential financial impact figure – maximum (currency)

8,000,000,000

Explanation of financial impact figure

This financial impact is intended to provide an estimate of Johnson Controls revenue at risk should we fail to update our product portfolio under a range of scenarios for emerging refrigerant regulations. The financial impact is calculated based on the potential annual impact to revenues at the end of the risk's time horizon (2025).

The minimum impact figure ($4 billion) assumes that governments in developed economies continue their regulatory approach to require low GWP refrigerants in HVAC equipment by 2025, which we view as a near certainty. The figure provided represents revenue from products sold in these markets which today use high GWP refrigerants.

The maximum impact figure ($8 billion) assumes all developed and developing economies globally accelerate the transition away from HFCs significantly faster than the targets established in the Kigali Amendment, establishing in 2025 regulations that

achieve HFC reductions not required until 2036 and 2047 for developing and developed economies respectively. While some regulatory-driven transitions may occur before the phase down targets in Kigali, we view this most aggressive pace as highly unlikely outside of niche products in specific markets. The figure provided represents the bulk of our HVACR product revenue globally that uses HFC and HFC-blend refrigerants today.

Cost of response to risk

200,000,000

Description of response and explanation of cost calculation

Johnson Controls has anticipated the shift away from HFCs since before the Kigali Amendment and has focused product development activities on the substitution of low GWP refrigerants in our HVAC portfolio. This process requires engagement with refrigerant suppliers to assess available low GWP refrigerants for a given application, including changes to product performance, safety, cost, and more. Once a new refrigerant is selected for a given application, product redesign and development is often required. The figure provided is illustrative of the costs to update our HVAC product platforms over our typical product development cycle and thus adequately control this risk.

We establish commercialization plans for low GWP HVAC products in anticipation of early market demand as well as regulatory mandates. Examples of product development include:

The 2018 launch of the York YZ chiller, which uses a refrigerant with over a 99% reduction in GWP, leverages our patented falling film heat exchanger technology to reduce refrigerant charge by up to 60%, and uses an oil-free magnetic bearing centrifugal compressor. The YZ chiller also delivers an improvement in energy efficiency performance of 30% when compared to similar centrifugal chillers.

In 2021, we announced that our residential and commercial unitary and applied products that currently use the refrigerant R410A will transition to the refrigerant R454B – a reduction in GWP of 78% – exceeding regulatory requirements beginning in 2024.

Comment

The threats posed by climate change are increasingly apparent, further raising awareness globally and triggering demands for action from national and subnational governments, including regulations on building products. Johnson Controls supports the drive to adopt these regulations and standards needed to tackle climate change. Throughout our HVACR portfolio, a wide array of low-emission products exist today and will continue to expand as we anticipate these regulations. As a result, we believe this risk is well-controlled.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Other, please specify

This risk describes the acute and chronic physical impact to our operations of climate-related physical risks

Primary potential financial impact

Increased capital expenditures

Company-specific description

Extreme weather events could result in damage to our physical plants and other assets, create the need for new transportation routes, and impact our suppliers and customers, thereby resulting in production delays, temporary reduction of our production capacity, and loss of revenue, among other impacts. As an example, our sites near coastal areas could be impacted by weather events like hurricanes. We track events and enact our crisis management program for potentially impacted sites during extreme weather events. We are in close contact with site management staff to ensure they are conducting pre-storm assessments and shutdown protocols and post-storm damage assessments to determine if business continuity plans need to be enacted to ensure continued operation for our customers. Climate science suggests a greater likelihood of flooding and, as a result, flood exposure is a criteria assessed when evaluating sites for a new material facility and monitored for current facilities.

We have specific processes in place to mitigate risk. Actions include expanding dual capability or creating extra inventory. Each facility has an emergency response plan to keep our employees and visitors safe as well as a business continuity plan to sustain business operations for each site that outlines site-specific potential courses of actions to ensure business continuity for our customers.

To help address water risk, our goal is to reduce water consumption by 10% at our water-stressed facilities by 2025. In 2021, we conducted a refreshed, detailed analysis of water stressed locations with the WRI AqueductTM tool. Johnson Controls has 23 manufacturing facilities that are located in regions that have high or extremely high risk of water scarcity with most in Mexico, the US, and India. Typically, our facilities are in industrial corridors or complexes with other industrial activities present, and our impacts on sources of water are not significant. The water stressed location goal is specific to the set of 23 location as identified in FY21. We have a Working Group dedicated to reducing water impacts and implementing water-saving efforts at all of our locations, prioritizing water-stressed locations. We have water reclamation technologies at several of our facilities, including all corporate headquarters - in Glendale, USA; Cork, Ireland; and Shanghai, China. At our Glendale facility we have a 30,000-gallon cistern to capture rainwater for reuse in water closets and urinals.

Time horizon

Long-term

Likelihood

Unlikely

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

2,000,000

Potential financial impact figure – maximum (currency)

500,000,000

Explanation of financial impact figure

We conducted a physical climate risk scenario analysis looking at the acute and chronic risks to our global locations within 1.5-degree (RCP 2.6), and greater than 2 degree (RCP 4.5) temperature increase scenarios. Nearly 400 of our locations were entered into a tool created by Willis Towers Watson, Climate Diagnostic, which applies these scenarios and time-horizons aligned with geospatial information to analyze these locations for physical climate risk exposure. It analyzed extreme weather events such as cyclones or floods (acute risk) and gradual changes in key variables such as temperature, humidity and precipitation (chronic stress factors). This tool has the ability to identify our operations most likely to be exposed to physical risks within a medium-term and long-term time horizon under RCP 4.5. At Johnson Controls, we have staff dedicated to operational risk management, and this data is in line with, and confirms our overall operational risk management approach which effectively mitigates these and other physical risks.

Based on our analysis we examined the facilities identified as having the greatest risk of exposure to an adverse physical climate event. We calculated the potential financial exposure for each location at the greatest risk of exposure. The location with the highest cost of replacement has an estimated replacement cost of $500M. The location with the lowest cost of replacement has an estimated replacement cost of $2M. These amounts represent the estimated replacement costs of the identified facilities if any were destroyed by an acute physical impact and excludes any potential insurance or other recoveries to offset the loss of the facility. The financial impact is calculated based on the cost that would be incurred during a single fiscal year and assumes that only one facility would be impacted during a fiscal year based on the overall low probability of such an event occurring. These costs represented in the financial impact would include labor, machinery, and building materials to construct a new plant and make the building operational along with the loss of business income during the rebuilding period and

additional expense to ship materials from manufacturing locations in other areas. All company facilities are insured for physical and business interruption losses, so this represents the unmitigated risk.

Cost of response to risk

25,000,000

Description of response and explanation of cost calculation

This cost assumes third party insurance recovery and represents the maximum residual replacement cost to our company should a location be destroyed by climate-related physical risk. Johnson Controls already has staff and processes in place to respond to physical risks, which may eliminate additional cost associated with this risk. Potential exposure from physical changes is currently assessed and managed through risk assessments. We are committed to protecting life, property, the environment and market share by constructing eligible facilities to the highest level of property protection known as Highly Protected Risk or HPR and constructing them where possible outside of known natural catastrophe areas. Designated facilities go through a third-party facility risk management audit every two to three years. For new construction, we evaluate multiple sites against risks such as environmental contamination, proximity risks and natural catastrophe (flood, windstorm) exposure and develop policies, plans and procedures where risks are optimally managed. Our global property protection program is designed to protect Johnson Controls' employees, facilities and assets from events that could affect our property (e.g., fire, explosion, natural disaster, machinery breakdown) as well as business interruption resulting from those risks. Our property insurance program insures our physical assets on a Replacement Cost New basis.

Business Continuity Planning and Crisis Management programs are key pillars in our risk mitigation program. Although the full repercussions of climate-change in particular locations remain to be fully identified, we update site assessments to allow for adequate risk mitigation planning. Designated facilities go through a facility risk audit every two to three years to ensure they can properly respond to risks.

In February 2021, operations, facilities, and employees were impacted by Winter Storm Uri in Texas. Five locations were affected by the storm and had intermittent power, pipe damage, water shortages and/or natural gas leaks as well. A crisis response team was mobilized to address facility and employee needs. The response team quickly went into action providing water, plumbing supplies, fuel, generators and other supplies. As a result of our planning and quick response, damage/interruption of business was very limited, and the situation is a good example of the effectiveness of our strategies to mitigate climate risks.

Comment

Though this risk did not meet our definition of substantive impact, we have included it to illustrate the physical risk that climate change poses to our business and operations. Our physical assets are critical to our ability to serve our customers, and we closely control our physical risks, including climate-related physical risk to our operations.

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier

Opp1

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

As the risks and costs associated with climate change become increasingly clear, the demand for climate solutions from investors, customers and the public at large can be seen to outpace government action. The number of companies committed to SBTs has increased more than 20-fold in the last 5 years and net zero emissions commitments have accelerated. This creates an enormous opportunity for revenue growth; these companies are our customers, and we are making the products and delivering the services that slash their emissions and put them on pace to meet these goals.

In addition to companies, governments have also established targets for net zero emissions, including for the buildings sector, which create additional demand for low-carbon solutions. These policies, such as tax incentives, building performance standards in the U.S., and a targeted “renovation wave” in Europe, will transform the market by incentivizing our customers build smart, net zero buildings and retrofit the existing building stock to meet aggressive targets for carbon emissions. This trend is distinct from regulations that curb “undesired” behavior, as they favor and provide incentive for our highest efficiency equipment, connected controls, building automation systems, and digital solutions.

2021 marks the 15th edition of JCI's Energy Efficiency Indicator survey with 1,000

respondents represented from 10 countries. Over 72% of respondents rated building energy codes and standards as being “extremely” or “very important." Not only will these policies create additional pull-through for products with best-in-class environmental performance, they play to JCI's strength as a provider of comprehensive integrated building solutions including building management systems supported by advanced digital tools and applications. The survey pointed to increased plans for decarbonization across all countries and topics – respondents increasingly plan to install heat pump technology or thermal energy storage and have implemented electric energy storage. Energy costs savings is the top driver of building energy and technology investment decisions, followed closely behind by the more than 78% of respondents who name minimizing the use of fossil fuels as a very or extremely important driver. Taken together, it is clear that there are a vast and growing array of government policies and incentives plus market incentives that are driving new and expanded customer demand for decarbonization services.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

11,500,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The financial impact is intended to provide an estimate of Johnson Controls revenue growth opportunities under a range of scenarios for increased demand for decarbonization solutions. The financial impact is calculated based on the potential annual impact to revenues at the beginning of the risk’s time horizon (2025).

The impact is calculated based on an estimated 10% incremental increase in revenue (approximately $1B) based on growth projections from Johnson Controls solutions tied to HVACR equipment, digital solutions, and decarbonization as-a-service revenue. The remaining $10.5 billion is representative of our 2025 revenue for these product categories under a “business as usual” scenario.

Even if the market shifts toward low-emissions solutions were not to materialize, global

policy changes are a near certainty, which will at a minimum create opportunities for low-emission solutions. We view the potential incremental impact of 10% in revenue to be a conservative assumption. For example, heat pumps represent 10-20% of the building and industrial heating market today. As we look out to 2030, that share could grow to 50% of the market in some segments. Likewise, we expect the market for digital, connected, smart building systems to grow rapidly to drive operational efficiencies and emissions reductions for our customers.

Cost to realize opportunity

220,000,000

Strategy to realize opportunity and explanation of cost calculation

To capture the opportunity associated with the market transition to low emission products we are investing in solutions to reduce our customer's emissions while enhancing their operational objectives. Improving product performance will remain key features of our investments, as are solutions that help our customers shift significant heating loads from on-site fossil fuel combustion to heat pumps, and digital, connected solutions that enable load optimization and increased utilization of low-carbon electricity sources.

The $220M represents the average of 75% of the last three years of R&D as reported in our 10-K. The cost to realize opportunity above represents our anticipated annual spend in climate related innovation as we do not report R&D costs by specific products or services in our financials. It excludes the cost of any inorganic investment, which we are unable to predict in amount or certainty.

Examples of product development and innovation that address this transition include:

OpenBlue Net Zero Buildings, which is Johnson Controls digital platform enabling our net zero as-a-service offering. This service can deliver net zero building operations to our customers by creating a retrofit roadmap to decarbonization and guaranteed emission reduction outcomes. As more of our customers aim for net zero emissions – whether driven by internal targets or government policy and incentives – this as-a-service offering positions us to capitalize on revenue opportunities.

The Sabroe DualPAC, together with our other applied water-to-water heat pump systems, which replace fossil fuel combustion boilers in buildings and industrial applications with high-efficiency heat pump heating, thereby enabling and accelerating the electrification of key sectors of our economy—a key step in decarbonizing those sectors.

The York YZV and YZT residential cold climate heat pumps provide efficient, reliable heating down to 5°f ambient outdoor temperatures. These heat pumps can significantly displace, and in some cases fully replace, home heating systems in the coldest North American climates that traditionally rely on fossil fuel combustion. Further, in 2021 we entered the DOE Cold Climate Heat Pump Challenge, as part of which we are developing residential heat pumps that push the limits of performance in the harshest

winters. This will be necessary as governments pursue regulations to reduce and eliminate fossil fuel combustion heating.

Comment

Johnson Controls views the customer shift in demand to low-carbon solutions as a near certainty, driven by both government policies and corporate objectives to reduce the exposure risks of GHG emissions. Taken together, these trends suggest an enormous opportunity to measure, manage, and reduce building and facility emissions; Johnson Controls believes it is well-positioned today to address this market and is investing heavily in new and improved solutions to drive our customer's emissions to lower and lower levels.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Move to more efficient buildings

Primary potential financial impact

Reduced indirect (operating) costs

Company-specific description

Johnson Controls has an opportunity to move to more efficient buildings, transition to more efficient modes of transportation, and reduce reliance on water. The reduction in Scope 1 and 2 emissions, and energy and water usage all provide reduction in our current and future operating costs.

Our scope 1&2 emissions are be categorized into three categories: Facilities, Fleet and Refrigerant loss, each contributing approximately 45%, 25%, and 20% respectively to emissions in FY21. For facilities, we operate over 1000 facilities worldwide, segmented into manufacturing locations, warehouses, corporate HQ and office locations, and branches for our field service operation. With the majority of our fleet in the United States and Europe, we operate one of the largest fleets globally. We are committed to Net Zero Scope 1 & 2 emissions by 2040, with a nearer term science-based targets of 55% reduction by 2030.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

4,000,000

Potential financial impact figure – maximum (currency)

10,000,000

Explanation of financial impact figure

In FY21, we formally launched the Johnson Controls Facility Decarbonization project. This project targets Scope 1&2 emissions through energy reductions and decreased refrigerant loss across eight of our largest facilities in the United States. The project includes a four-part strategy of lowering emissions: high efficiency equipment upgrades; process improvement; energy and water conservation; and OpenBlue Enterprise Manager, a digital suite of smart building solutions to amplify the emissions and water reductions. The financial impact is an annual impact in 2030.

The minimum impact is the annual energy and water utility savings for the set of eight manufacturing locations in the Facility Decarbonization project. The maximum impact is the annual utility savings plus the Scope 1&2 emissions savings forecasted by 2030, multiplied by $28/ MT CO2e. Annual utility savings is estimated at $4M and the total emissions saved by 2030 is 207K MT CO2e multiplied by $28 / MT CO2e is $5.796M, for maximum total of $10M.

Having already achieved 38% reduction, we are well on a path to our goals and are now taking on the challenge to fully decarbonize all three major components of Scope 1&2 emissions.

Our Fleet Transition strategy is focused on lowering emissions from our management and field service operations globally. We are focused on the use of telematics for the most efficient customer routes and the transition to more efficient vehicles, including hybrid and electric vehicles. We are in process of understanding and calculating the net financial opportunity of fleet emissions reduction.

In 2018, we committed to 10% reduction of water use in water-stress locations by 2025 vs. a baseline of 2017, and we measure and report water use across our global footprint. In addition to existing water reduction efforts, Johnson Controls has launched an focused efforts effort to reduce water consumption across all water-stressed locations. The best practices identified in water reduction are also integrated into our Facility Decarbonization project.

Though this opportunity did not meet our definition of substantive impact, we have included it to illustrate the importance of decarbonization of our own facilities.

Cost to realize opportunity

3,300,000

Strategy to realize opportunity and explanation of cost calculation

Johnson Controls is responding to the opportunity with a detailed assessment of Scope 1 and 2 GHG Emissions. Understanding emissions are primarily generated from facilities, fleet, and refrigerant loss, the team further broke down the point of generation.

For facilities, we performed a detailed, global analysis of our largest 500 facilities, accounting for over 70% of our total facility emissions. For each of these facilities, we analyzed energy utilization and evaluated the availability of renewable energy sources to help prioritize where to find the most opportunity for emissions reduction.

The global list of facilities was then narrowed to a focused set of locations, where our Johnson Controls Sustainable Infrastructure team performed onsite assessments to understand the potential for energy, water, process, and equipment improvements. Eight sites were selected, with detailed planned upgrades to enable Johnson Controls as an enterprise to reduce total facility emissions over 50% by 2030. The project applies the Johnson Controls Net Zero Buildings and OpenBlue Enterprise Manager tools to not only reduce emissions but demonstrate the application of decarbonization design thinking and water conservation to put us on a path to Net Zero by 2040.

For fleet, we are developing an integrated emissions reduction roadmap that models our total fleet and forecasts emission reductions from the transition to more fuel-efficient vehicles, including hybrids and full electric vehicles. We are also implementing telematics to assist our teams to increase fleet efficiency and business performance.

Lastly, our refrigerant loss reduction strategy is a combination of process improvements and equipment upgrades across all facilities with refrigerant charging capability. Since 2017, as a result of our ongoing improvements from the Johnson Controls EHS and Global Operations teams, refrigerant emissions have been reduced 50%. The plans for further upgrades forecasts emissions reductions of 65% reduction by 2025 and 75% by 2030.

The costs of the Facility Decarbonization, inclusive of both facility and refrigerant emissions reduction, is being completed in an as-a-service subscription model, with a net operational expense of $3.3M annually for 20 years.

Comment

As we implement decarbonization projects across Johnson Controls, our employees are energized to be a part of the carbon transition. From understanding the source of our Scope 1 & 2 emissions to learning and implementing reduction projects, sustainability is integrated into how we work across the enterprise.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

More customers are prioritizing reducing carbon emissions and adopting more sustainable business practices as awareness of the impacts of climate change increases. Supporting customers in their decarbonization journey will create significant opportunity for Johnson Controls. We are well positioned to help businesses, governments, institutions and organization across a broad spectrum of economic sectors reach their goals through our wide range of products, solutions and services.

In collaboration with Johnson Controls, Forrester Consulting conducted a thought leadership study to evaluate the progress that sustainability-focused companies have made in pursuing their goals. They conducted a series of interviews and fielded an online survey with 2,348 global sustainability strategy leaders from 25 countries across 19 industries.

The data across all stakeholders demonstrates strong preference for sustainable products and an increase in their demand over time. The study found that the business benefits of investing in sustainability are substantial and particularly advantageous for the most sustainability engaged companies. 80% of global respondents stated that implementing and maturing sustainability initiatives is the number one business priority in the next year. This is an increase of over 25% in the past two years. This priority shows up in all regions and across all vertical markets. 85% of organizations have a long-term sustainability goal. The average target date for achieving these goals is 2024.

Customers are expecting their solution provider will help them in multiple ways—including but extending beyond providing efficient equipment. They are looking for a genuine partner in their decarbonization journey. That journey will require not just in-building technology and efficiency services, but outside-the-building as well. Johnson Controls core HVACR technology and services can help customers drive their buildings to maximum efficiency, but to get to net zero requires that the remaining building energy be either supplied or offset with renewable, carbon-free energy.

Time horizon

Long-term

Likelihood

Very likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

670,000,000

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Johnson Controls estimates that an incremental $240B growth in the market for sustainable building technology and services will develop between 2021 and 2035, with most of that growth occurring in the latter half of the forecast period. In addition, outside-the-building sustainability solutions like green energy procurement, demand response services and ground-mounted and canopy solar and storage will add another $190B or more over that same forecast period. Johnson Controls already provides many of these outside-the-building renewable energy solutions today, and we are aggressively expanding our capabilities globally.

Current internal analysis suggests that this represents a $190B market opportunity between 2021 and 2035, with most of that growth occurring in the latter half of the forecast period. After taking into account JCI market share, by the year 2035, we expect an annual incremental revenue of $670M in outside-the-building decarbonization-related growth. The financial impact is an annual impact in 2035.

We believe this estimate is conservative. Johnson Controls is already seeing significant interest from customers who are looking for a Net Zero solutions provider that can deliver an end-to-end solution, from building a roadmap and documenting current state for Scope 1, 2 and 3 emissions, all the way to achieving Net Zero emissions from their buildings. 38% of the Global 500 now have a significant milestone related to reducing climate change set for 2030. Johnson Controls is building a complete ecosystem of internal capabilities and external partnerships to help all customers reach their climate change goals.

Cost to realize opportunity

220,000,000

Strategy to realize opportunity and explanation of cost calculation

The Company continues to observe trends demonstrating increased interest and demand for safe, efficient and sustainable buildings, and seeks to capitalize on these trends to drive growth by developing and delivering technologies and solutions to create smart, sustainable and healthy buildings. In 2020, the Company launched its software platform, OpenBlue, enabling enterprises to manage all aspects of their physical spaces delivering sustainability, new occupant experiences, and safety and security by combining the Company's building expertise with cutting-edge technology, including AI-powered service solutions such as remote diagnostics, predictive maintenance, compliance monitoring and advanced risk assessments. The Company continues to leverage its install base, together with data-driven products and services to offer outcome-based solutions to customers with a focus on generating accelerated growth in services and recurring revenue for the Company.

In addition, we offer an award-wining, world-class heat pump portfolio, which is a key technology to decreasing carbon emissions. These heat pumps provide our customers a pathway to carbon-neutral heating while relying on low-GWP refrigerants. JCI could see an increase in marketing costs to communicate technical / sustainable improvements to its products and practices. In addition, in 2022 Johnson Controls launched our "Net Zero as a Service" offering as a way to address building decarbonization that delivers a comprehensive, tailored energy efficiency, renewable energy and financing solution to customers. The seamless integration of energy efficient building technologies with outside-the-building green energy solutions will help customers "Solve for Zero".

In January 2021, the Company committed to invest 75 percent of its new product research and development in climate-related innovation to develop sustainable products and services. The $220M represents the average of 75% of the last three years of R&D as reported in our 10-K. The cost to realize opportunity above represents our anticipated annual spend in climate related innovation as we do not report R&D costs by specific products or services in our financials. It excludes the cost of any inorganic investment, which we are unable to predict in amount or certainty.

Comment

C3. Business Strategy

C3.1

(C3.1) Does your organization's strategy include a transition plan that aligns with a 1.5°C world?

Row 1

Transition plan

Yes, we have a transition plan which aligns with a 1.5°C world

Publicly available transition plan

No

Mechanism by which feedback is collected from shareholders on your transition plan

We have a different feedback mechanism in place

Description of feedback mechanism

Every two years, we complete a Sustainability Materiality Assessment. During this process, we engage our business leaders, employees, customers, supply chain partners, industry associations, non-governmental organizations, trade media, academia, investors, and rating agencies. We specifically worked with Investor Relations who reached out individually to our largest shareholders to obtain their feedback on our most important environmental, social and governance issues. We also consult academic leaders who are knowledgeable about our business to ensure cross-functional and global representation. The process helps Johnson Controls assess the environmental, social and governance topics that are priorities for our shareholders and other stakeholders.

Climate-related risks are explicitly integrated into our annual multi-disciplinary Enterprise Risk Management Process. Due to the importance of climate-related issues, we also engage in a focused risks and opportunities process specific to climate-related risks and opportunities that is aligned with our overall ERM framework. In 2022, the Company held a climate-related risks and opportunities process, consisting a series of meetings and discussions with company senior leadership from sustainability, legal, finance, strategy, operations, enterprise property, supplier sustainability, regulatory affairs, ethics and compliance, procurement and environment, health and safety.

We used the climate-related scenario analyses and worked with teams across the company and external consultants to assess the impact of transition risks including policy and legal, technology, market and reputation, physical risks including acute and chronic, and opportunities including those afforded by resource efficiency, energy source, our products/services, markets and resilience. We used the analysis to identify the most critical climate-related risks and opportunities along with strategies for increasing our company's resiliency through proactive strategies and management actions.

In addition, we have key teams in place to oversee and ensure management actions on our climate-related risks and opportunities. They include our Executive Committee, Executive Leadership Team, the ESG Policy, Regulatory Leadership Committee, Sustainable Finance Committee, Risk Management Committee, the ESG Global Council, the Purchasing Leadership Team, and specialized committees and management groups.

Frequency of feedback collection

More frequently than annually

Attach any relevant documents which detail your transition plan (optional)

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

	Use of climate-related scenario analysis to inform strategy
Row 1	Yes, qualitative and quantitative

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Transition scenarios IEA NZE 2050	Company-wide		We conducted scenario analysis for our transition risks aligned to a low carbon world, distinguishing between a 1.5-degree and 2-degree scenario where possible. Assumptions for evaluating transition risks were based on IEA NZE 2050, IEA SDS and IEA APS scenarios, comparing differences in expected political, technology, economic and social factors and the potential impact on our business.
Transition scenarios IEA SDS	Company-wide		We conducted scenario analysis for our transition risks aligned to a low carbon world, distinguishing between a 1.5-degree and 2-degree scenario where possible. Assumptions for evaluating transition risks were based on IEA NZE 2050, IEA SDS and IEA APS scenarios, comparing differences in expected political, technology, economic and social factors and the potential impact on our business.
Transition scenarios IEA APS	Company-wide		We conducted scenario analysis for our transition risks aligned to a low carbon world, distinguishing between a 1.5-degree and 2-degree scenario where possible. Assumptions for evaluating transition risks were based on IEA NZE 2050, IEA SDS and IEA APS scenarios, comparing differences in expected political, technology, economic and social factors and the potential impact on our business.
Physical climate scenarios RCP 2.6	Company-wide		Johnson Controls worked with Willis Towers Watson to develop a physical climate change exposure diagnostic and screening of physical risks at key supplier and operational locations. The analysis was supported by

			Climate Diagnostic, a Willis Towers Watson proprietary platform designed to geospatially map and analytically assess potential exposures to current and future climate conditions, as a function of different time horizons and climate scenarios. This supply chain physical risk study assessed JCI's acute and chronic physical risks to their Supply Chain for the following time horizons and scenarios (where data is available): Current Climate (aligned with our Short-Term time horizon), 2030 (aligned with our Medium-Term Time Horizon), and 2050 (Aligned with our Long-Term Time Horizon). Two benchmark climate scenarios have been considered for the analysis, based on the IPCC reports: +1.5°C (RCP 2.6, also comparable with SSP1-2.6), and greater than 2.0°C (RCP 4.5, also comparable with SSP2-4.5).
Physical climate scenarios RCP 4.5	Company-wide		Johnson Controls worked with Willis Towers Watson to develop a physical climate change exposure diagnostic and screening of physical risks at key supplier and operational locations. The analysis was supported by Climate Diagnostic, a Willis Towers Watson's proprietary platform designed to geospatially map and analytically assess potential exposures to current and future climate conditions, as a function of different time horizons and climate scenarios. This supply chain physical risk study assessed JCI's acute and chronic physical risks to their Supply Chain for the following time horizons and scenarios (where data is available): Current Climate (aligned with our Short-Term time horizon), 2030 (aligned with our Medium-Term Time Horizon), and 2050 (Aligned with our Long-Term Time Horizon). Two benchmark climate scenarios have been considered for the analysis, based on the IPCC reports: +1.5°C (RCP 2.6, also comparable with SSP1-2.6), and greater than 2.0°C (RCP 4.5, also comparable with SSP2-4.5).

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

What short, medium and long-term climate-related forces and developments will drive or represent risk to our business growth?
What are the most substantive climate-related residual risks and opportunities to our business and what are our management approaches?

Results of the climate-related scenario analysis with respect to the focal questions

Taking action on climate change has long been core to our business. We have tried to help lead in the space, becoming one of the very first industrial companies to sign the UN Global Compact back in 2004, by disclosing our carbon emissions since 2002 and by making ever more ambitious commitments to reducing our own carbon footprint and that of the products we sell. Since 2002, we've cut our emissions intensity by more than 70%, and we've invested to bring to market products that outperform in efficiency and in reduced climate impact.

Two years ago, we took a deeper look at the close connection between climate change and our business. Leaders from across the enterprise came together in a deep dive on the topic in our first TCFD aligned climate-related risks & opportunities assessment.

We took significant action in light of our findings. For example, we committed to dedicating at least 75% of our new product development R&D in climate-related innovation to develop sustainable products and services. We have explicitly integrated climate-impacts into our overall Enterprise Risk Management process. Due to the importance of climate-related issues, this year we also engaged in a focused risks and opportunities process specific to climate-related risks and opportunities that is aligned with our overall ERM framework.

Understanding that buildings account for some 40% of global greenhouse gas emissions, we set out to build public awareness of the need to address buildings in climate change policy. We developed a short message and pushed it out on the TED Talk platform and our CEO drove home the message in numerous forums including at President Biden's White House Leaders Summit on Climate and in US Senate Testimony (April, 2021).

We bring new products to market that are critical to achieving deep decarbonization. For example, we invested in and dramatically expanded our heat pump product portfolio. Moreover, we know that digitalization is also essential if we are to achieve net zero buildings. We therefore developed a truly open and comprehensive digital platform—OpenBlue—that can add some 50% additional efficiency gains to the operation of a building by connecting diverse and siloed systems, and importantly, by enabling integration of renewable assets and electric vehicles into the building.

We took additional major steps in climate governance as well. We named our first Chief Sustainability Officer and elevated her to the Executive Committee of the company, reporting directly to the CEO. And our Board reshaped the governance committee,

establishing our Governance and Sustainability Committee with a revised charter expressly underscoring Board oversight of our climate change and sustainability work.

In short, every aspect of our business, our strategy and our leadership is shaped and informed by the risks and opportunities we see posed by climate change.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	We are taking significant action in light of our findings from our climate-related risks and opportunities analyses. Understanding that buildings account for some 40% of global greenhouse gas emissions, we bring new products to market that are critical to achieving decarbonization. Our product offerings are designed to lower emissions, including the transition to electrification, low-global warming potential refrigerants, and digital offerings to monitor and optimize the energy, emissions, and water usage. We offer alternative refrigerants across all chiller platforms, with GWP reductions ranging from 56 to more than 99 percent compared to conventional refrigerants. For example, the Sabroe DualPAC, among other applied water-to-water heat pump systems, replace fossil fuel combustion boilers in buildings and industrial applications with high-efficiency heat pump heating, thereby enabling and accelerating the electrification of key sectors of our economy—a key step in decarbonizing those sectors. The York YZV and YZT residential cold climate heat pumps provide efficient, reliable heating down to 5 degrees Fahrenheit ambient outdoor temperatures. These heat pumps can significantly displace, and in some cases fully replace, home heating systems in the coldest North American climates that traditionally rely on fossil fuel combustion. Further, in 2021 we entered the DOE Cold Climate Heat

		Pump Challenge, where we are developing residential heat pumps that push the limits of performance at very low ambient temperatures and will ultimately be necessary as governments seek to reduce and eliminate fossil fuel combustion heating. We know that digitalization is also essential if we are to achieve net zero buildings. We therefore developed an open and comprehensive digital platform—OpenBlue—that can add some 50% additional efficiency gains to the operation of a building by connecting diverse and siloed systems, and importantly, by enabling integration of renewable assets and electric vehicles into the building. OpenBlue Net Zero Buildings can deliver net zero building operations to our customers by creating a retrofit roadmap to decarbonization and guaranteed emission reduction outcomes. And, looking forward, we committed to dedicating at least 75% of our new product development R&D in climate-related innovation to develop sustainable products and services.
Supply chain and/or value chain	Yes	Recognizing the climate-related risks to our supply chain, we are committed to incorporating supplier sustainability into our business strategy. In 2021, we doubled the weight the Sustainability Rating has on supplier scorecards. Sustainability is equal to cost, quality and delivery in supplier performance evaluations. We employ a proprietary supplier questionnaire, administered to key suppliers annually, to assess our suppliers' sustainability programs on topics including climate. It also asks if the supplier is publicly reporting data, such as its greenhouse gas emissions, and specifically asks if the supplier is disclosing its carbon emissions to the CDP global disclosure system. In addition to this survey, on-site reviews of supplier operations may also occur as needed. We partnered with EcoVadis, a globally recognized sustainability assessment ratings agency, to adopt a systematic ratings program to evaluate suppliers based on their environmental, business, and social practices. EcoVadis not only evaluates disclosures submitted from suppliers but utilizes a global monitoring system to evaluate business practices.

		We also formed a Supplier Council to share sustainability best practices, evaluate and launch new sustainability programs, and contribute to our long-term strategy for supplier engagement. We are proud to have been honored by CDP as a Supplier Engagement Leader.
Investment in R&D	Yes	We recognize the urgency of delivering climate solutions now along with the significant opportunity we have to build on our company's history of providing sustainable products and solutions and helping our customers decarbonize. Thus, our strategy includes the commitment aligned to a short-term time horizon to invest 75 percent of our new product development R&D in climate-related innovation to develop sustainable products and services. In fiscal year 2021, 78 percent of new product research and development was invested in climate-related innovation to develop sustainable products and services. Innovations include reduction of emissions across Scope 1, 2 and 3, reduction of material usage, and improved life cycle management. We have invested in new services and solutions to capitalize on opportunities created by the efforts to combat climate change. We have invested in, developed and deployed solutions such as Net Zero Buildings as a Service. This new, as-a-service offering includes turnkey access to successful net zero building roadmaps. Regulations which seek to reduce GHG emissions present a significant risk to our global products business, predominantly our HVAC solutions, if Johnson Controls does not adequately prepare its product portfolio. We are addressing future regulations by transitioning to low-GWP refrigerants, improving energy performance, and investing in efficient electric heat pump heating and cooling equipment to meet and exceed anticipated standards. In addition, Johnson Controls is partnering with customers, leading technology companies, research institutions and government entities to build innovative solutions in pursuit of net zero carbon.

Operations	Yes	We drive emissions reductions in our customers' operations and in our own. Johnson Controls continues to take significant climate action and has committed to achieving net zero Scope 1 and 2 carbon emissions by 2040 – ten years ahead of the goal set out in the Paris Climate Agreement. By 2040, we also seek to achieve 100 percent renewable electricity usage globally. By 2030, the company aims to cut its Scope 1 and 2 emissions by 55 percent from a 2017 baseline. These ambitious 2030 emissions reduction targets have been approved by the Science Based Targets initiative. Science shows this is a critical time for climate action, and we need to move fast to avoid the worst impacts of climate change. By 2025 we have committed to reduce absolute emissions by 55 percent for Scope 1 and 2 and by five percent for Scope 3. We exceeded our 2021 goals to reduce both greenhouse gas intensity and energy intensity by 25 percent from a 2017 baseline. Since 2017, we have achieved a 41 percent reduction in greenhouse gas emissions intensity and a 15 percent reduction in energy intensity. Our company has achieved a 38 percent reduction of Scope 1 and 2 emissions since 2017, reducing more than 415,000 metric tons of CO2 e to date. We have launched our internal Net Zero Transition Plan focused on emission reductions across our global facilities, including energy and refrigerant emissions and our global fleet. We are utilizing our Net Zero as a Service teams, including the full suite of OpenBlue solutions, to accelerate our transition to net zero. In 2021, we offset 100 percent of our greenhouse gas emissions from electricity from our manufacturing plants in the United States and our US corporate headquarters through the purchase of 209,000 MWh of renewable energy certificates. We have four sites supplied with 100 percent renewable energy. We are also growing our onsite renewables in several locations. In 2022, we are making significant investments in renewable

		energy. Our projects entail onsite renewables and additionality of renewable energy. Our total investment could account for nearly 75 percent of all our US electricity usage. Moreover the Company has a commitment to achieve 100 percent renewable energy for our operations by 2040.

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Capital allocation Access to capital	Yes, climate-related considerations have influenced our capital and liquidity planning and will continue to influence our financial strategy going forward. In September 2021, we became the first S&P 500 industrial to issue a sustainability-linked bond in the US debt capital markets. Our sustainability-linked bond ties the interest rate on the bond to the achievement of 2025 interim targets of 35 percent emissions reduction for Scope 1 and 2 and five percent emissions reduction for Scope 3. Just one year earlier, we completed our inaugural green bond issuance, making Johnson Controls one of the first industrial companies to issue a green bond in the US debt capital markets. In December 2019, Johnson Controls became one of the first industrial companies to tie its senior revolving credit facilities to individual sustainability metrics in the US syndicated loan market. Our sustainability-linked bond and green bond were issued in line with our integrated sustainable finance framework (updated from our previous green finance framework). This framework is aligned with the most current editions of the International Capital Market Association principles and guidelines for green, social, sustainability, and sustainability-linked bonds and loans. These principles intend to promote integrity of the sustainable financing market by offering guidelines that recommend transparency, disclosure and reporting to drive investment in sustainable projects. We have established a Sustainable Finance Committee consisting of

		members of our ESG Policy, Regulatory Leadership Committee, treasury, legal and other subject matter experts. This committee is responsible for evaluating and selecting projects that will receive allocations related to green, social and sustainability use of proceeds, based on adherence to the definition of eligible green and social projects in our framework.

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's transition to a 1.5°C world?

Yes

C3.5a

(C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organization's transition to a 1.5°C world.

Financial Metric

Other, please specify

Research and development

Percentage share of selected financial metric aligned with a 1.5°C world in the reporting year (%)

75

Percentage share of selected financial metric planned to align with a 1.5°C world in 2025 (%)

75

Percentage share of selected financial metric planned to align with a 1.5°C world in 2030 (%)

75

Describe the methodology used to identify spending/revenue that is aligned with a 1.5°C world

We have committed to invest 75 percent of new product development R&D in climate-related innovation to develop sustainable products and services.

In fiscal year 2021, 78 percent of new product research and development was invested in climate-related innovation to develop sustainable products and services. Innovations include reduction of emissions across Scope 1, 2 and 3, reduction of material usage, and improved life cycle management.

We have established criteria for sustainable R&D that is used to identify and prioritize climate-related innovations. We define R&D projects as sustainable if it meets one of

these criterion; the cumulative investment in these projects, expressed as a percentage of total annual R&D budget, is our reported climate-related innovation.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?

Absolute target
Intensity target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number

Abs 1

Year target was set

2021

Target coverage

Company-wide

Scope(s)

Scope 1
Scope 2

Scope 2 accounting method

Market-based

Scope 3 category(ies)

Base year

2017

Base year Scope 1 emissions covered by target (metric tons CO2e)

682,761

Base year Scope 2 emissions covered by target (metric tons CO2e)

396,612

Base year Scope 3 emissions covered by target (metric tons CO2e)

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

1,079,373

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

100

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

100

Target year

2030

Targeted reduction from base year (%)

55

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

485,717.85

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

451,311

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

212,918

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

664,229

% of target achieved relative to base year [auto-calculated]

69.9301606328

Target status in reporting year

New

Is this a science-based target?

Yes, and this target has been approved by the Science Based Targets initiative

Target ambition

1.5°C aligned

Please explain target coverage and identify any exclusions

This target is company-wide. In 2021, our Science Based Targets (SBTs) were approved by the Science Based Targets initiative. Our Scope 1 and 2 targets align with the ambitious Paris Agreement aim to limit global temperature to 1.5 degrees Celsius. Our SBTs establish commitments to reduce our Scope 1 and 2 emissions by 55 percent by 2030 against a 2017 baseline.

We utilize the operational control GHG emissions consolidation approach for Scopes 1 and 2 emissions, consistent with The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) and The Greenhouse Gas Protocol: Scope 2 Guidance, An amendment to the GHG Protocol Corporate Standard.

Standards, methodologies, assumptions, and/or calculation tools used for direct (Scope 1) and indirect (Scope 2 and 3) GHG emissions:

Activity data is mostly tracked using our Environmental, Health and Safety Information System (EHSIS) tool. A small portion of the data is tracked using templates consistent with the listed standards.

• The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
• The Greenhouse Gas Protocol: Scope 2 Guidance, An amendment to the GHG Protocol Corporate Standard
• The Greenhouse Gas Protocol: Technical Guidance for Calculating Scope 3 Emissions
• The Greenhouse Gas Protocol: Scope 3 Evaluator tool
• The Climate Registry: General Reporting Protocol
• The Climate Registry: Electric Power Sector (EPS) Protocol
• U.S. EPA Climate Leaders: Indirect Emissions from Purchases/Sales of Electricity and Steam
• U.S. EPA Climate Leaders: Direct Emissions from Stationary Combustion
• U.S. EPA Climate Leaders: Direct Emissions from Mobile Combustion Sources and DEFRA.
• GHG emissions consolidation approach for Scopes 1 and 2: Operational control
• Emission factor sources:
- U.S. EPA
- International Energy Agency (IEA)
- The Climate Registry
- DEFRA
• GWP values taken from:
-IPCC Fourth Assessment Report (AR4 - 100 year)

Plan for achieving target, and progress made to the end of the reporting year

Our company has achieved a 38 percent reduction of Scope 1 and 2 emissions since 2017, reducing more than 415,000 metric tons of CO2e to date. The three primary contributors of Scope 1 and 2 emissions come from our facilities, fugitive refrigerants, and fleet. We measure emissions monthly, applying continuous improvement across all categories throughout the year. We have cross-functional project teams focused in each area to develop our low-carbon transition strategies.

Our operations leaders globally are accountable and responsible to achieve improvements across our manufacturing facilities as part of our Johnson Controls Manufacturing System. Energy Champions in each plant lead a cross-functional Energy Hunt team in continuous improvement activities that result in annual energy intensity improvements. This program drives culture change and helps our plants identify energy savings opportunities by evaluating measures that include HVAC temperature scheduling, lighting, supply and demand of compressed air, building envelope, and employee energy awareness and engagement. We are assessing our facilities globally for deep retrofits, going beyond the standard Energy Hunt measures to uncover decarbonization opportunities. Our best-in-class Sustainability as a Service teams are turning their skills internally to achieve our emissions reduction targets. The first phase is targeting eight of our largest-emitting plants in the United States, with plans to expand the assessment and retrofit in Asia Pacific.

Our manufacturing sites actively look to reduce all forms of refrigerant loss through site-specific, multi-disciplinary management teams. In 2021, through the implementation of a kaizen focused on refrigerant loss reduction, we reduced the carbon footprint of refrigerant loss in our operations by 31 percent over the prior year. Around a quarter of our greenhouse gas emissions come from our vehicle fleet. In fiscal year 2021, we reduced vehicle emissions by 19 percent from a 2017 baseline. We have a specific vehicle emissions reduction workgroup to analyze emissions data and ensure we achieve reductions throughout our fleet. We annually analyze our transportation supply chain to improve cost structure and reduce energy use. Over time, we are systematically changing our fleet vehicles, utilizing higher fuel economy and electric vehicles where appropriate. We also optimize our logistics and our packaging to decrease weight and increase load factors.

List the emissions reduction initiatives which contributed most to achieving this target

Target reference number

Abs 2

Year target was set

2021

Target coverage

Company-wide

Scope(s)

Scope 3

Scope 2 accounting method

Scope 3 category(ies)

Category 11: Use of sold products

Base year

2017

Base year Scope 1 emissions covered by target (metric tons CO2e)

Base year Scope 2 emissions covered by target (metric tons CO2e)

Base year Scope 3 emissions covered by target (metric tons CO2e)

128,700,000

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)

128,700,000

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2

Base year Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)

94

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes

94

Target year

2030

Targeted reduction from base year (%)

16

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]

108,108,000

Scope 1 emissions in reporting year covered by target (metric tons CO2e)

Scope 2 emissions in reporting year covered by target (metric tons CO2e)

Scope 3 emissions in reporting year covered by target (metric tons CO2e)

116,100,000

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)

116,100,000

% of target achieved relative to base year [auto-calculated]

61.1888111888

Target status in reporting year

New

Is this a science-based target?

Yes, and this target has been approved by the Science Based Targets initiative

Target ambition

Well-below 2°C aligned

Please explain target coverage and identify any exclusions

This target is company-wide and covers more than 90% of reported emissions in relevant scope 3 categories.

In 2021, our Science Based Targets (SBTs) were approved by the Science Based Targets initiative. Our SBTs establish commitments to reduce our Scope 1 and 2 emissions by 55 percent by 2030 against a 2017 baseline and reduce our Scope 3 emissions 16 percent over the same period.

We report Scope 3 emissions consistent with The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition), The Greenhouse Gas Protocol: Technical Guidance for Calculating Scope 3 Emissions, and The Greenhouse Gas Protocol: Scope 3 Evaluator tool.

Activity data is mostly tracked using our Environmental, Health and Safety Information System (EHSIS) tool. A small portion of the data is tracked using templates consistent with the listed standards.

• The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

• The Greenhouse Gas Protocol: Scope 2 Guidance, An amendment to the GHG Protocol Corporate Standard
• The Greenhouse Gas Protocol: Technical Guidance for Calculating Scope 3 Emissions
• The Greenhouse Gas Protocol: Scope 3 Evaluator tool
• The Climate Registry: General Reporting Protocol
• The Climate Registry: Electric Power Sector (EPS) Protocol
• U.S. EPA Climate Leaders: Indirect Emissions from Purchases/Sales of Electricity and Steam
• U.S. EPA Climate Leaders: Direct Emissions from Stationary Combustion
• U.S. EPA Climate Leaders: Direct Emissions from Mobile Combustion Sources and DEFRA.
• GHG emissions consolidation approach for Scopes 1 and 2: Operational control
• Emission factor sources:
- U.S. EPA
- International Energy Agency (IEA)
- The Climate Registry
- DEFRA
• GWP values taken from:
-IPCC Fourth Assessment Report (AR4 - 100 year)

Plan for achieving target, and progress made to the end of the reporting year

In fiscal year 2021, we reduced Scope 3 emissions for use of sold products by 9.7 percent compared to fiscal year 2017. Our Scope 3 SBTi target is a 16 percent reduction by 2030, and relevant to category 11 products in use. The biggest contributor to our reduction in Scope 3 emissions in fiscal year 2021 was the sales of more energy-efficient chillers, as well as continued growth of renewable electricity.

In fiscal year 2021, 78 percent of new product research and development was invested in climate-related innovation to develop sustainable products and services. Innovations include reduction of emissions across Scope 1, 2 and 3, reduction of material usage, and improved life cycle management.

Scope 3 emissions reduction will be driven in part by Johnson Controls state-of-the art equipment that leads the market in efficiency, magnified by OpenBlue technologies and innovations. These solutions leverage big data and artificial intelligence to optimize building sustainability and deliver significant improvement in energy efficiency and corresponding carbon emissions.

The biggest contributor to our reduction in Scope 3 emissions in fiscal year 2021 was the sales of more energy-efficient chillers, as well as continued growth of renewable electricity

List the emissions reduction initiatives which contributed most to achieving this target

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number
Int 1

Year target was set
2017

Target coverage
Company-wide

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Market-based

Scope 3 category(ies)

Intensity metric
Other, please specify
Metric tons CO2e per Million USD revenue

Base year
2017

Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)
30.1

Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)
17.5

Intensity figure in base year for Scope 3 (metric tons CO2e per unit of activity)

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)
47.6

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure
100

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure

100

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this Scope 3 intensity figure

% of total base year emissions in all selected Scopes covered by this intensity figure

100

Target year

2025

Targeted reduction from base year (%)

25

Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]

35.7

% change anticipated in absolute Scope 1+2 emissions

-13

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)

19.28

Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)

9.09

Intensity figure in reporting year for Scope 3 (metric tons CO2e per unit of activity)

Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)

28.37

% of target achieved relative to base year [auto-calculated]

161.5966386555

Target status in reporting year

Underway

Is this a science-based target?

No, but we are reporting another target that is science-based

Target ambition

Please explain target coverage and identify any exclusions

This target is company-wide and represents our goal to achieve 25% reduction in emissions intensity by 2025 from a 2017 baseline. We utilize the operational control GHG emissions consolidation approach for Scopes 1 and 2 emissions, consistent with The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) and The Greenhouse Gas Protocol: Scope 2 Guidance, An amendment to the GHG Protocol Corporate Standard.

Standards, methodologies, assumptions, and/or calculation tools used for direct (Scope 1) and indirect (Scope 2 and 3) GHG emissions:

Activity data is mostly tracked using our Environmental, Health and Safety Information System (EHSIS) tool. A small portion of the data is tracked using templates consistent with the listed standards.

• The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
• The Greenhouse Gas Protocol: Scope 2 Guidance, An amendment to the GHG Protocol Corporate Standard
• The Greenhouse Gas Protocol: Technical Guidance for Calculating Scope 3 Emissions
• The Greenhouse Gas Protocol: Scope 3 Evaluator tool
• The Climate Registry: General Reporting Protocol
• The Climate Registry: Electric Power Sector (EPS) Protocol
• U.S. EPA Climate Leaders: Indirect Emissions from Purchases/Sales of Electricity and Steam
• U.S. EPA Climate Leaders: Direct Emissions from Stationary Combustion
• U.S. EPA Climate Leaders: Direct Emissions from Mobile Combustion Sources and DEFRA.
• GHG emissions consolidation approach for Scopes 1 and 2: Operational control
• Emission factor sources:
- U.S. EPA
- International Energy Agency (IEA)
- The Climate Registry
- DEFRA
• GWP values taken from:
-IPCC Fourth Assessment Report (AR4 - 100 year)

Plan for achieving target, and progress made to the end of the reporting year

We exceeded our 2021 goals to reduce both greenhouse gas intensity and energy intensity. Greenhouse gas intensity is measured as total Scope 1 and 2 emissions divided by revenue. Energy intensity is total energy divided by revenue. Since 2017, we

have achieved a 41 percent reduction in greenhouse gas emissions intensity and a 15 percent reduction in energy intensity. Reductions in both categories were driven by focused efforts on facilities, refrigerants and our fleet.

Johnson Controls takes an enterprise approach to reducing our greenhouse gas (GHG) emissions, which is linked closely to our activities on energy reduction. We are committed to continuously reducing the environmental impact of all our own operations, which includes our manufacturing plants, distribution centers, service centers, offices, fleets and other operations worldwide. We look across the lifecycle of our business, including emissions upstream, within our global operations and downstream.

Our emissions reduction strategies include improving energy efficiency, using renewable energy (either on-site or off-site), tracking and managing emissions using information technology, and exploring how demand response, energy storage, and other new technologies can continue to help us manage our emissions. Additionally, we continuously seek cost-competitive lower-carbon electricity and other energy, voluntarily purchasing RECs (renewable energy certificates) making sure they are additional to the green power that may already be offered in the standard electricity mix. We also have on-site renewable energy in some of our locations.

In 2021, through the implementation of a kaizen focused on refrigerant loss reduction, Johnson Controls reduced the carbon footprint of refrigerant loss in our operations by 31 percent over the prior year.

Around a quarter of our greenhouse gas emissions come from our vehicle fleet. In fiscal year 2021, we reduced vehicle emissions by 19 percent from a 2017 baseline. We have a specific vehicle emissions reduction workgroup to analyze emissions data and ensure we achieve reductions throughout our fleet. We annually analyze our transportation supply chain to improve cost structure and reduce energy use. Over time, we are systematically changing our fleet vehicles, utilizing higher fuel economy and electric vehicles where appropriate.

List the emissions reduction initiatives which contributed most to achieving this target

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?

Net-zero target(s)
Other climate-related target(s)

C4.2b

(C4.2b) Provide details of any other climate-related targets, including methane reduction targets.

Target reference number
Oth 1

Year target was set
2018

Target coverage
Company-wide

Target type: absolute or intensity
Intensity

Target type: category & Metric (target numerator if reporting an intensity target)
Energy consumption or efficiency
GJ

Target denominator (intensity targets only)
Other, please specify
Global revenue in Million USD

Base year
2017

Figure or percentage in base year
358

Target year
2025

Figure or percentage in target year
0.75

Figure or percentage in reporting year
303

% of target achieved relative to base year [auto-calculated]
15.3953813856

Target status in reporting year
Underway

Is this target part of an emissions target?

In 2018, we announced Sustainability Goals for 2025 related to greenhouse gas emissions, energy, water, waste, safety and diversity from a 2017 baseline. As part of this strategy, we committed to reducing energy and greenhouse gas intensity by 25% by 2025. Our energy intensity target supports our greenhouse gas emissions intensity target as energy is a critical component of our emissions profile.

Is this target part of an overarching initiative?

EP100

Please explain target coverage and identify any exclusions

This target is company-wide and represents our goal to achieve 25% reduction in energy intensity by 2025 from a 2017 baseline. Activity data is mostly tracked using our Environmental, Health and Safety Information System (EHSIS) tool. A small portion of the data is tracked using templates consistent with the listed standards.

• The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
• The Greenhouse Gas Protocol: Scope 2 Guidance, An amendment to the GHG Protocol Corporate Standard
• The Greenhouse Gas Protocol: Technical Guidance for Calculating Scope 3 Emissions
• The Greenhouse Gas Protocol: Scope 3 Evaluator tool
• The Climate Registry: General Reporting Protocol
• The Climate Registry: Electric Power Sector (EPS) Protocol
• U.S. EPA Climate Leaders: Indirect Emissions from Purchases/Sales of Electricity and Steam
• U.S. EPA Climate Leaders: Direct Emissions from Stationary Combustion
• U.S. EPA Climate Leaders: Direct Emissions from Mobile Combustion Sources and DEFRA.
• GHG emissions consolidation approach for Scopes 1 and 2: Operational control
• Emission factor sources:
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- International Energy Agency (IEA)
- The Climate Registry
- DEFRA
• GWP values taken from:
-IPCC Fourth Assessment Report (AR4 - 100 year)

Plan for achieving target, and progress made to the end of the reporting year

We exceeded our 2021 goals to reduce both greenhouse gas intensity and energy intensity. Greenhouse gas intensity is measured as total Scope 1 and 2 emissions divided by revenue. Energy intensity is total energy divided by revenue. Since 2017, we have achieved a 41 percent reduction in greenhouse gas emissions intensity and a 15 percent reduction in energy intensity. Reductions in both categories were driven by focused efforts on facilities, refrigerants and our fleet.

We are committed to continuously reducing the environmental impact of all our own operations, which includes our manufacturing plants, distribution centers, service

centers, offices, fleets and other operations worldwide. We look across the lifecycle of our business, including upstream, within our global operations and downstream.

In 2021, we offset 100 percent of our greenhouse gas emissions from electricity from our manufacturing plants in the United States and our US corporate headquarters through the purchase of 209,000 MWh of renewable energy certificates.

We have four sites supplied with 100 percent renewable energy, located in Corropoli, Italy; Vacarisses, Spain; Subic, Philippines; and Enschede, The Netherlands. We are also growing our onsite renewables in several locations, including our corporate headquarters buildings in Glendale (USA) and Shanghai (China), Matamoros (Mexico), Puspokladany (Hungary), Neuruppin (Germany), Cologno (Italy), and Wuxi and Guangzhou (China). We entered into a green tariff in Wichita, Kansas, near our 1.3 million square foot HVAC manufacturing plant which, beginning the fiscal year 2021, was 100 percent powered by wind energy.

In 2022, we are making significant investments in renewable energy. Our projects entail onsite renewables and additionality of renewable energy.

List the actions which contributed most to achieving this target

C4.2c

(C4.2c) Provide details of your net-zero target(s).

Target reference number
NZ1

Target coverage
Company-wide

Absolute/intensity emission target(s) linked to this net-zero target
Abs1

Target year for achieving net zero
2040

Is this a science-based target?
No, but we are reporting another target that is science-based

Please explain target coverage and identify any exclusions
Johnson Controls International plc has committed to net zero Scope 1 and 2 emissions by 2040 - ten years ahead of the goal set out in the Paris Climate Agreement.

Do you intend to neutralize any unabated emissions with permanent carbon removals at the target year?

No

Planned milestones and/or near-term investments for neutralization at target year

Planned actions to mitigate emissions beyond your value chain (optional)

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.

Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	
To be implemented*	8	60,000
Implementation commenced*	0	0
Implemented*	3	114,917
Not to be implemented	0	

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Fugitive emissions reductions

Refrigerant leakage reduction

Estimated annual CO2e savings (metric tonnes CO2e)

67,999

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
17,000

Payback period
No payback

Estimated lifetime of the initiative
>30 years

Comment
Our manufacturing sites actively look to reduce all forms of refrigerant loss through site-specific, multi-disciplinary management teams. These meet on a regular basis with a continued focus on company-level goal setting; education and awareness; optimizing our current management of processes, standards, and protocols; and investment, implementation and sharing of best management practices, including leak detection programs, digitization, and monitoring technology, to effectively manage this important resource.

In 2021, through the implementation of kaizen events focused on refrigerant loss reduction, Johnson Controls reduced the carbon footprint of refrigerant loss in our operations by 31 percent over the prior year. The investment figure provided reflects investments made in multiple upgrades to one facility which resulted in a saving of 23,126 mtCO2e. These initiatives did not result in any cost savings.

Initiative category & Initiative type
Transportation
Company fleet vehicle replacement

Estimated annual CO2e savings (metric tonnes CO2e)
28,233

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 1

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
0

Investment required (unit currency – as specified in C0.4)
0

Payback period

No payback

Estimated lifetime of the initiative

3-5 years

Comment

As part of our global response to mitigate emissions, our Uruguay Subscriber Business kicked off the project to renew their response and service fleets with electric vehicles. They targeted the transition of the response fleet to 100 percent electric vehicles before the end of fiscal year 2022 and the service units by the second quarter of 2023, setting the pace to a more sustainable business model in the country.

An electric vehicle pilot is being conducted at select locations in North America to inform our overall strategy on electric vehicle use in our North American fleet. Teams are piloting electric vehicles and determining a charging solution that works for our take-home business model. As we are committed to emissions reductions now, we are also researching hybrid vehicle options as a steppingstone. We continue to add lower emissions cars and vans into our fleet as we look to the future of converting to electric vehicles.

Electric vehicles have been available as an option to company car drivers in Europe since October 2020, and our drivers across Europe are choosing both electric and plug-in hybrid electric vehicles. Within the van or service vehicle fleet, we will soon be piloting electric vehicles, and are currently using Mild Hybrid Electric Vehicles wherever possible. Within Europe, electric vehicles now represent about five percent of our fleet with planned significant growth.

These initiatives did not result in significant cost savings.

Initiative category & Initiative type

Energy efficiency in buildings
Maintenance program

Estimated annual CO2e savings (metric tonnes CO2e)

19,591

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in C0.4)

135,000

Investment required (unit currency – as specified in C0.4)

0

Payback period

No payback

Estimated lifetime of the initiative

16-20 years

Comment

The emissions savings stated represent energy consumption savings across our facilities between fiscal year 20 and fiscal year 21 and not our voluntarily purchased Green-e certified Renewable Energy Credits (RECs). We also entered into a green tariff in Wichita, Kansas, near our 1.3 million square foot HVAC manufacturing plant which, beginning the fiscal year 2021, was 100 percent powered by wind energy. The projected energy cost savings from the wind power agreement are approximately $2.7 million over the life of the 20-year contract, resulting in average annual savings of $135,000. Because the initiative does not require any capital investment, we have indicated our investment as $0 and no payback period.

Four other sites are supplied with 100 percent renewable energy located in Corropoli, Italy; Vacarisses, Spain; Subic, Philippines; and Enschede, The Netherlands. We are also growing our onsite renewables in several locations, including our corporate headquarters buildings in Glendale (USA) and Shanghai (China), Matamoros (Mexico), Puspokladany (Hungary), Neuruppin (Germany), Cologno (Italy), and Wuxi and Guangzhou (China). Our Johnson Controls corporate headquarters building in Glendale, Wisconsin is LEED Platinum certified and has on-site solar generation, which directly supplies a proportion of the site's electricity needs for electricity, offsetting our electricity consumption from the standard utility supply.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Dedicated budget for energy efficiency	Our Scope 1 & 2 emissions are generated from three primary categories: facilities, refrigerant losses and fleet. Johnson Controls has a dedicated focus to reduce energy and GHG emissions at our global facilities, through which we have identified eight US facilities with a significant opportunity to reduce emissions and improve resiliency. The investment in these facility upgrades is financed through a sustainability subscription model, transitioning a one-time CAPEX cost to a multi-year OPEX payment. We also have a comprehensive and highly successful refrigerant loss reduction program using leak detection technology and engineering

	solutions, transition to low GHG refrigerants and are transitioning our fleet transition to electric vehicles.
Internal price on carbon	Johnson Controls utilizes an implicit price on carbon as a reference point for energy efficiency and emissions reduction projects. The implicit price is calculated using the total annual investment divided by the annual MT of CO2e abated. The price is used as input to prioritize projects; however, it is not the only criteria used to guide our decision to invest in energy or emissions reduction projects. In 2021, the implicit price of carbon is compared against $28 / MT CO2e – the median price of carbon reported to CDP in 2020 by 116 companies in the Manufacturing segment (reference: CDP_Global_Carbon_Price_report_2021.pdf)
Compliance with regulatory requirements/standards	For over 40 years, national and sub-national governments have set regulations in response to concerns about energy security and environmental protection, including standards targeting the buildings sector. Many solutions offered by Johnson Controls are subject to these regulations, including residential and light commercial air conditioners, heat pumps, and furnaces, and commercial rooftop units, chillers, and air handling equipment. As governments respond to the threats of climate change with increasing urgency, we expect these regulations will accelerate. Regulations which seek to reduce GHG emissions present a significant risk to our global products business, predominantly our heating, ventilation, and air conditioning (HVAC) solutions. These regulations tend to target a reduction in the global warming potential (GWP) of refrigerants, increasing equipment energy efficiency, and the elimination of fossil fuel combustion as a direct heating source. . Johnson Controls proactively addresses this risk by regularly updating existing product platforms and through new product innovation to incorporate the above anticipated regulatory objectives, throughout each stage of these product development processes. We are addressing future regulations by transitioning to low-GWP refrigerants, improving energy performance, and investing in efficient electric heat pump heating and cooling equipment to meet and exceed anticipated standards. Not only do these improvements address regulatory compliance, they also help capture the opportunities presented by customer demands for reduced operating expenses and lower GHG emissions. Moreover, we ensure continuous improvement and excellence in our product offerings both by dedicating at least 75% of our new product R&D to sustainability and climate improvement, and we developed a sustainability screen for capital investments in new products.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify

Corporate Knights taxonomy for Green Revenue, with modifications as needed to align with specific JCI product definitions

Type of product(s) or service(s)

Heating and cooling

Other, please specify

Air-source heat pumps using heat recovery, Central heat pump hydronic systems, Ground-source heat pumps, Air-to-air, air-to-water, and water-to-water technology

Description of product(s) or service(s)

Addressing our customers' emissions through state-of-the-art heating, cooling, and refrigeration technology is integral to our product strategy. Our portfolio includes ducted and ductless, split and packaged air-to-air heating solutions, as well as the world's largest set of air-to-water and water-to-water chillers and heat pumps. These products are available at ultra-high efficiencies, low and ultra-low global warming potential refrigerants, and are integrated with additional advanced technologies such as energy recovery systems and chilled and hot water storage. We lean heavily on our diverse portfolio of heating and cooling products to make significant improvements in energy efficiency for our customers, as well as shift their heating loads from fossil fuel combustion to electric heat pumps. Examples of our state-of-the art technology include:

The award-winning YZ Chiller, with energy efficiency improvements of up to 30% of comparable chillers, uses a refrigerant with over a 99% reduction in GWP, reduces refrigerant charge by up to 60%, and uses an oil-free magnetic bearing compressor

The York CYK and Sabroe DualPAC, among other applied water-to-water systems, which can replace fossil fuel combustion boilers in buildings and industrial applications with high-efficiency heat pump heating

Our advanced line of York commercial rooftop units, which were launched in advance of regulations effective in 2023 and exceed these energy efficiency requirements by as much as 40%

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

No

Methodology used to calculate avoided emissions

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Functional unit used

Reference product/service or baseline scenario used

Life cycle stage(s) covered for the reference product/service or baseline scenario

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

Explain your calculation of avoided emissions, including any assumptions

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

---

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify

Corporate Knights taxonomy for Green Revenue, with modifications as needed to align with specific JCI product definitions

Type of product(s) or service(s)

Buildings construction and renovation

Other, please specify

Smart building systems

Description of product(s) or service(s)

Our suite of digital solutions and controls are critical to helping our customers optimize their energy consumption while driving sustainable, healthy, and secure building outcomes. These products include sensors and controls, smart, connected security systems, building management systems, and our suite of digitalization solutions. Through the use of these products we are able dramatically reduce our customers energy consumption, and in turn help them reduce operating expenses and meet their carbon reduction objectives without sacrificing building asset functionality. Examples include:

Our OpenBlue suite of digital solutions, which enable our customers to access all data points in a building and fully optimize for desired outcomes through cloud computing, such as delivering necessary levels of indoor air quality at the lowest possible level of energy consumption

Metasys, one of the world's most popular building management systems and an enabler of deep automation and control of individual building components and systems

Our connected fire and security systems, which are designed to reduce the amount of hardware needed on-site, shift energy-intensive local computing to the cloud, and reduce false alarms and accompanying resource inefficiencies

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

No

Methodology used to calculate avoided emissions

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Functional unit used

Reference product/service or baseline scenario used

Life cycle stage(s) covered for the reference product/service or baseline scenario

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

Explain your calculation of avoided emissions, including any assumptions

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

Level of aggregation

Product or service

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify

Corporate Knights taxonomy for Green Revenue, with modifications as needed to align with specific JCI service definitions

Type of product(s) or service(s)

Buildings construction and renovation

Other, please specify

Energy Savings Performance Contracts

Description of product(s) or service(s)

Our Performance Infrastructure includes building energy- efficient lighting retrofits, renewable energy sources and advanced technologies that manage energy use in buildings. One offering is Energy Savings Performance Contracting (ESPC) projects, allowing users to make capital improvements, reduce energy, water, emissions, address tight budgets and use the expected utility and operational savings to offset the cost of the upgrades. Johnson Controls has been involved in energy-saving, performance-based contracting with public and private organizations since the inception of performance contracting in 1983. Additionally, in 2021 we launched OpenBlue Net Zero Buildings a holistic and complementary service that accelerate the decarbonation of our customers businesses, helping them manage the carbon transition. Since January 2000, performance contracting have helped avoid more than 35.2 million metric tons CO2e.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Other, please specify

We use guaranteed energy savings data from each performance contracting project and apply appropriate emission factors for each energy source to compute the GHG value associated with the guaranteed savings.

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Use stage

Functional unit used

Energy savings converted to carbon emissions using the appropriate emissions factors.

Reference product/service or baseline scenario used

Customer energy consumption prior to project implementation.

Life cycle stage(s) covered for the reference product/service or baseline scenario

Use stage

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

1,200,000

Explain your calculation of avoided emissions, including any assumptions

This figure represents our customers' avoided emissions from the execution of Energy Savings Performance Contracts in 2021, using the methodology described above.

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

---

Level of aggregation

Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon

Other, please specify

Corporate Knights taxonomy for Green Revenue, with modifications as needed to align with specific JCI service definitions

Type of product(s) or service(s)

Buildings construction and renovation

Other, please specify

Heating and cooling, smart building systems, Energy Savings Performance Contracts

Description of product(s) or service(s)

Revenue generated from our low-carbon products and services as % of total revenue in the reporting year in this row is representative of all Green Revenue, and not just for this category. Product and service types considered as Green Revenue are described in the lines above.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

No

Methodology used to calculate avoided emissions

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Functional unit used

Reference product/service or baseline scenario used

Life cycle stage(s) covered for the reference product/service or baseline scenario

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

Explain your calculation of avoided emissions, including any assumptions

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

48

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?

No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?

No

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?
Row 1	No

C5.2

(C5.2) Provide your base year and base year emissions.

Scope 1

Base year start
October 1, 2016

Base year end
September 30, 2017

Base year emissions (metric tons CO2e)
682,761

Comment

Scope 2 (location-based)

Base year start
October 1, 2016

Base year end
September 30, 2017

Base year emissions (metric tons CO2e)
400,442

Comment

Scope 2 (market-based)

Base year start
October 1, 2016

Base year end
September 30, 2017

Base year emissions (metric tons CO2e)
396,612

Comment

Scope 3 category 1: Purchased goods and services

Base year start
October 1, 2016

Base year end
September 30, 2017

Base year emissions (metric tons CO2e)
3,826,000

Comment

Scope 3 category 2: Capital goods

Base year start
October 1, 2016

Base year end
September 30, 2017

Base year emissions (metric tons CO2e)
1,891,000

Comment

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start
October 1, 2016

Base year end
September 30, 2017

Base year emissions (metric tons CO2e)
30,000

Comment

Scope 3 category 4: Upstream transportation and distribution

Base year start
October 1, 2016

Base year end
September 30, 2017

Base year emissions (metric tons CO2e)
501,000

Comment

Scope 3 category 5: Waste generated in operations

Base year start

October 1, 2016

Base year end

September 30, 2017

Base year emissions (metric tons CO2e)

5,000

Comment

Scope 3 category 6: Business travel

Base year start

October 1, 2016

Base year end

September 30, 2017

Base year emissions (metric tons CO2e)

32,000

Comment

Scope 3 category 7: Employee commuting

Base year start

October 1, 2016

Base year end

September 30, 2017

Base year emissions (metric tons CO2e)

217,000

Comment

Scope 3 category 8: Upstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Indirect emissions from leased space are already estimated and reported under Scope 2. The accounting methodology for this source uses the same logic only estimates the natural gas (direct emissions) from the leased space we have and reports it in this category.

Scope 3 category 9: Downstream transportation and distribution

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 10: Processing of sold products

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 11: Use of sold products

Base year start

October 1, 2016

Base year end

September 30, 2017

Base year emissions (metric tons CO2e)

128,700,000

Comment

Scope 3 category 12: End of life treatment of sold products

Base year start

October 1, 2016

Base year end

September 30, 2017

Base year emissions (metric tons CO2e)

1,400,000

Comment

Scope 3 category 13: Downstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 15: Investments

Base year start

October 1, 2016

Base year end

September 30, 2017

Base year emissions (metric tons CO2e)

0

Comment

Scope 3: Other (upstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3: Other (downstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Defra Environmental Reporting Guidelines: Including streamlined energy and carbon reporting guidance, 2019
IEA CO2 Emissions from Fuel Combustion
IPCC Guidelines for National Greenhouse Gas Inventories, 2006
The Climate Registry: Electric Power Sector (EPS) Protocol
The Climate Registry: General Reporting Protocol
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
The Greenhouse Gas Protocol: Scope 2 Guidance
US EPA Center for Corporate Climate Leadership: Indirect Emissions From Purchased Electricity
US EPA Center for Corporate Climate Leadership: Direct Emissions from Stationary Combustion Sources
US EPA Center for Corporate Climate Leadership: Direct Emissions from Mobile Combustion Sources
US EPA Emissions & Generation Resource Integrated Database (eGRID)
Other, please specify
National Inventory Report 1990–2018 (Canada)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
451,311

Start date
October 1, 2020

End date
September 30, 2021

Comment

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)
549,358

Start date
October 1, 2019

End date
September 30, 2020

Comment

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)
642,379

Start date
October 1, 2018

End date
September 30, 2019

Comment

Past year 3

Gross global Scope 1 emissions (metric tons CO2e)

631,752

Start date

October 1, 2017

End date

September 30, 2018

Comment

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based

We are reporting a Scope 2, location-based figure

Scope 2, market-based

We are reporting a Scope 2, market-based figure

Comment

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based

300,725

Scope 2, market-based (if applicable)

212,918

Start date

October 1, 2020

End date

September 30, 2021

Comment

Past year 1

Scope 2, location-based

331,236

Scope 2, market-based (if applicable)

229,809

Start date

October 1, 2019

End date

September 30, 2020

Comment

Past year 2

Scope 2, location-based

386,221

Scope 2, market-based (if applicable)

264,108

Start date

October 1, 2018

End date

September 30, 2019

Comment

Past year 3

Scope 2, location-based

402,455

Scope 2, market-based (if applicable)

305,578

Start date

October 1, 2017

End date

September 30, 2018

Comment

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure?

No

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

4,800,000

Emissions calculation methodology

Average spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

We used the WRI and Quantis Scope 3 Evaluator tool to generate emissions for this category. We have a global spend report for the fiscal year broken down by commodity category. Some of the included categories are: metals, services, etc. Using this categorization level, we mapped the spend report using the categories listed in the Scope 3 evaluator. Once the mapping was done, then we populated the total spend values in the Scope 3 Evaluator tool online, and obtained the estimated greenhouse gas emissions in a detailed report.

Capital goods

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

3,000,000

Emissions calculation methodology

Spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

We used the WRI and Quantis Scope 3 Evaluator tool to generate emissions for this category. We have a global spend report for the fiscal year broken down by commodity category. Some of the included categories are: metals, services, etc. Using this categorization level, we mapped the spend report using the categories listed in the Scope 3 evaluator. Once the mapping was done, then we populated the total spend values in the Scope 3 Evaluator tool online, and obtained the estimated greenhouse gas emissions in a detailed report.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

57,000

Emissions calculation methodology

Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

For this category we compute the emissions from the transmission and distribution losses for the volume of electricity and natural gas used. We use a different source of factors for each. In the case of electricity, we use the “Electric Power Transmission and Distribution Losses (% of Output)” data table from the World Bank. We then extract our facility emissions from electricity by country and apply the latest T&D loss factors by country (2014 release) accordingly in order to compute a global total of emissions. In the case of natural gas, we use the Energy Star website and resources. The document “Energy Star – Performance Ratings Methodology for Incorporating Source Energy Use” provides technical detail on the methodology developed by the EPA to calculate source energy for energy performance ratings. Source energy would represent the total amount of raw fuel that is required to operate a facility. It would incorporate all transmission, delivery, and production losses, which is a primary accounting focus in this category. In this energy star document, “Table 1 – Source-Site Ratio for all Portfolio Manager Fuels” shows per Fuel Type the Source-Site Ratio value, which would help compute the T&D losses for any source of energy. The table shows a 1.047 for natural gas, meaning that 4.7% is lost in the distribution of natural gas to its end use location, in average in the US. Using this value as an average, we then applied it to our natural gas consumption and converted to GHGs.

Upstream transportation and distribution

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

440,000

Emissions calculation methodology

Fuel-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

Our logistics and financial teams compile information regarding the spend Johnson Controls has with logistics suppliers by region, business unit, and type of transportation. In order to estimate GHG emissions from this data point, a fuel spend % is used and applied to the total dollar value. This percentage is then applied to the total spend value to compute dollars attributed to fuel usage only. Then using average fuel cost rates, dollars are converted into volume (gallons) of fuel used. After obtaining volume of fuel, emission factors for gasoline/petrol and diesel are applied in order to obtain a GHG value.

Waste generated in operations

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

4,000

Emissions calculation methodology

Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

Using the mass of waste hauled during FY2021 by disposition method we compute process emissions from the waste generated in our operations. The emission factors and methodology are in accordance with the external and internal methodologies of reference adapted to waste management activities EPE 2008 “Protocol for the quantification of greenhouse gas emissions from waste management activities”; also on the IPCC (Intergovernmental Panel on Climate Change) 2006 first order estimation model of diffuse methane emissions from landfills; and on the Veolia Environmental Services 2007 environmental reporting Measurement and Reporting Protocol. No transportation emissions were included at this time (considering these are optional to be reported as stated by the GHG Protocol).

Business travel

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

19,000

Emissions calculation methodology

Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

100

Please explain

Air travel: Johnson Controls works travel agencies who are able to generate and provide us with a GHG report that shows total miles flown as well as total GHG emissions attributed to them per division globally. Latest emission factors for air travel from UK DEFRA are used to estimate emissions. Rental vehicles: We retrieve mileage driven by employees using rental vehicles. We use EPA emission factors for emissions per vehicle-mile to estimate impact.

Employee commuting

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

230,000

Emissions calculation methodology

Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

We use the average commuting profile for the US and Europe, the company's largest employee density areas, to estimate the emissions from commuting. These profiles were applied to the average distance a sample of employee travel from their home to work on a work year based on prior year survey. These emissions were then extrapolated to the rest of the global employees.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Indirect emissions from leased space are already estimated and reported under Scope 1 and Scope 2.

Downstream transportation and distribution

Evaluation status

Not relevant, explanation provided

Please explain

Johnson Controls does not directly pay for or control the transport or distribution of our inbound or outbound products once they are sold to our customers. In addition to not having control over this category, Johnson Controls has recognized that this category is not material from a magnitude standpoint as category 4 -upstream transportation & distribution would be, when analyzing the transportation of its products. Thus in accordance with the GHG Protocol, we report according to Scope 3- category 4.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Please explain

This category has been defined as being not relevant, not material for Johnson Controls. Our products do not undergo additional processing other than simple assembly making this category not relevant for our business activities.

Use of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

116,100,000

Emissions calculation methodology

Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

This value represents the lifetime use phase emissions from HVAC products that Johnson Controls manufactured during our reporting year period. Our HVAC products represent the material portion of our use phase emissions sources. Our team developed an assessment methodology that estimates the GHG emissions - driven by energy consumption and fugitive refrigerant losses - for the life of the product. The team considered the expected average performance specifications by product line, information of the region where they are operated, and total production to estimate the

emissions from their use phase. The team ran this calculation for the main product lines with the biggest impact, manufactured in the highest quantity and representative of their category, then extrapolated for the others produced in smaller numbers.

End of life treatment of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

1,300,000

Emissions calculation methodology

Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners

0

Please explain

This value represents the refrigerant losses that occur at the end of the life of HVAC products. This value considers the end of life emissions for all products manufactured during our reporting year. We considered the average refrigerant charge for each different product line and then used the recovery efficiency factors from the Climate Registry to estimate the fugitive losses while recovering the refrigerant at the end of its lifecycle. This factor is multiplied by the total number of units manufactured during reporting year to estimate total emissions for all products. In a similar fashion to our usage phase emissions, we ran this calculation for the main product lines with the biggest impact, manufactured in the highest quantity and representative of their category, then extrapolated for the others produced in smaller numbers.

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

We have a handful of office spaces that are subleased, but they are a minor footprint that is immaterial to our overall Scope 3 emissions. Therefore, this category is not relevant to our company.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

Johnson Controls does not own any franchises, therefore, this category is not relevant to our Scope 3 emissions.

Investments

Evaluation status

Not relevant, explanation provided

Please explain

Johnson Controls has previously focused on collecting data for its minority non-operationally controlled joint ventures that are not included in scope 1 and 2. In the past the material portion of this category existed under the Automotive Seating business which is no longer part of the company and is now an independent company.

Other (upstream)

Evaluation status

Not relevant, explanation provided

Please explain

Johnson Controls has no other upstream scope 3 emissions.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Please explain

Johnson Controls has no other downstream scope 3 emissions.

C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date

October 1, 2019

End date

September 30, 2020

Scope 3: Purchased goods and services (metric tons CO2e)

4,600,000

Scope 3: Capital goods (metric tons CO2e)

2,800,000

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

29,000

Scope 3: Upstream transportation and distribution (metric tons CO2e)

528,000

Scope 3: Waste generated in operations (metric tons CO2e)
4,000

Scope 3: Business travel (metric tons CO2e)
19,000

Scope 3: Employee commuting (metric tons CO2e)
226,000

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)
112,400,000

Scope 3: End of life treatment of sold products (metric tons CO2e)
1,300,000

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)
0

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

Past year 2

Start date
October 1, 2018

End date
September 30, 2019

Scope 3: Purchased goods and services (metric tons CO2e)
4,704,000

Scope 3: Capital goods (metric tons CO2e)

2,899,000

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

33,000

Scope 3: Upstream transportation and distribution (metric tons CO2e)

566,000

Scope 3: Waste generated in operations (metric tons CO2e)

5,000

Scope 3: Business travel (metric tons CO2e)

43,000

Scope 3: Employee commuting (metric tons CO2e)

248,000

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)

127,600,000

Scope 3: End of life treatment of sold products (metric tons CO2e)

1,400,000

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

0

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

Past year 3

Start date
October 1, 2017

End date
September 30, 2018

Scope 3: Purchased goods and services (metric tons CO2e)
5,141,000

Scope 3: Capital goods (metric tons CO2e)
2,905,000

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)
35,000

Scope 3: Upstream transportation and distribution (metric tons CO2e)
496,000

Scope 3: Waste generated in operations (metric tons CO2e)
6,000

Scope 3: Business travel (metric tons CO2e)
48,000

Scope 3: Employee commuting (metric tons CO2e)
244,000

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)
130,600,000

Scope 3: End of life treatment of sold products (metric tons CO2e)
1,400,000

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)

0

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

C-CG6.6

(C-CG6.6) Does your organization assess the life cycle emissions of any of its products or services?

	Assessment of life cycle emissions	Comment
Row 1	Yes	We assess life cycle emissions using a sample of products today. Over the next two years, we plan to integrate additional design for sustainability principles into our product development process so that new products will be assessed for life cycle emissions.

C-CG6.6a

(C-CG6.6a) Provide details of how your organization assesses the life cycle emissions of its products or services.

	Products/services assessed	Life cycle stage(s) most commonly covered	Methodologies/standards/tools applied	Comment
Row 1	Representative selection of products/services	Cradle-to-grave	Other, please specify Chartered Institution of Building Services Engineers (CIBSE) TM65 Method	We follow the CIBSE TM65 Standard to assess the life cycle impact of our products. This process directs us to account for the embodied impact of sourced materials and components, as well as energy, used in the manufacturing process to complete the cradle-to-gate stage. Product

				end of life is also addressed by assessing component and material reuse and recyclability potential. Use phase energy consumption remains the majority of our product-related emissions today, and while this is addressed in the TM65 Standard, we also assess this impact with more precision on a per-product basis. This process is outlined in our response to C-CG8.5a.

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

Yes

C6.7a

(C6.7a) Provide the emissions from biogenic carbon relevant to your organization in metric tons CO2.

	CO2 emissions from biogenic carbon (metric tons CO2)	Comment
Row 1	4,488	Biomass emissions are due to the use of ethanol fuel by a portion of our vehicle fleet, and from the combustion of wood pellets as a source of energy at one of our plants in Denmark.

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure

0.0000284

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)

664,229

Metric denominator

unit total revenue

Metric denominator: Unit total

23,415,000,000

Scope 2 figure used

Market-based

% change from previous year

19.31

Direction of change

Decreased

Reason for change

Primary drivers include a reduction in fuel consumption within vehicle fleet, use of renewable energy sources at some sites, and a reduction in fugitive refrigerants in manufacturing, and a reduction in energy use in buildings.

GHG Intensity is Metric Tons CO2e per Million USD in revenue
Metric denominator above is Million USD in revenue

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	219,329	IPCC Fourth Assessment Report (AR4 - 100 year)

CH4	54	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	111	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	231,817	IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/region.

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America	274,173
China	26,638
Mexico	17,136
Taiwan, China	9,976
Canada	12,452
Republic of Korea	11,468
Germany	5,133
Thailand	3,588
United Kingdom of Great Britain and Northern Ireland	17,449
Other, please specify Rest of World	73,299

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.

By business division

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Building Solutions and Global Products	450,546
Corporate	765

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/region.

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)

United States of America	132,305	
Mexico	41,574	
China	11,299	
Germany	11,206	
Republic of Korea	10,365	
Canada	8,741	
Thailand	22,126	
India	6,668	
United Kingdom of Great Britain and Northern Ireland	25,753	
Other, please specify Rest of World	25,586	
Japan	5,101	

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Building Solutions and Global Products	293,293	207,681
Corporate	7,432	5,237

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	13,620	Decreased	1.75	Emissions value (percentage) represents the decrease in renewable energy consumption of 13,620 metric tons CO2e in market-based emissions from FY2020 to FY2021 divided by total FY2020 Scope 1 and 2 total emissions of 779,169 metric tons CO2e . Several plants entered into green tariffs including Wichita, Kansas, our 1.3 million square foot HVAC manufacturing plant which, beginning the fiscal year 2021, was 100 percent powered by wind energy.
Other emissions reduction activities	101,318	Decreased	13	Emissions value (percentage) represents the decrease in other emissions reduction activities of 101,318 metric tons CO2e from FY2020 to FY2021 divided by total FY2020 Scope 1 and 2 total emissions of 779,169 metric tons CO2e . The 101,318 plus 13,620 (114,938) represents the total decrease in metric tons CO2e of scope 1 and 2 emissions from FY2020 to FY2021. The three primary contributors of Scope 1 and 2 emissions come from our facilities, fugitive refrigerants, and fleet. We measure emissions monthly, applying continuous improvement across all categories throughout the year. We have cross-functional project teams focused on each area to develop our low-carbon transition strategies. In 2021, we offset 100 percent of our greenhouse gas emissions from electricity from our manufacturing plants in the United States and our US

				corporate headquarters through the purchase of 209,000 MWh of renewable energy certificates.
Divestment				
Acquisitions				
Mergers				
Change in output				
Change in methodology				
Change in boundary				
Change in physical operating conditions				
Unidentified				
Other				

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C-CG7.10

(C-CG7.10) How do your total Scope 3 emissions for the reporting year compare to those of the previous reporting year?

Increased

C-CG7.10a

(C-CG7.10a) For each Scope 3 category calculated in C6.5, specify how your emissions compare to the previous year and identify the reason for any change.

Purchased goods and services

Direction of change

Increased

Primary reason for change

Change in output

Change in emissions in this category (metric tons CO2e)

200,000

% change in emissions in this category

4

Please explain

An increase in global economic activity drove an increase in production and thus our purchased goods and services.

Capital goods

Direction of change

Increased

Primary reason for change

Change in output

Change in emissions in this category (metric tons CO2e)

200,000

% change in emissions in this category

7

Please explain

An increase in global economic activity drove an increase in production and thus our purchased capital goods.

Fuel and energy-related activities (not included in Scopes 1 or 2)

Direction of change

Increased

Primary reason for change

Change in output

Change in emissions in this category (metric tons CO2e)

28,000

% change in emissions in this category

97

Please explain

An increase in global economic activity drove an increase in production and thus our energy-related activities.

Upstream transportation and distribution

Direction of change

Decreased

Primary reason for change

Other emissions reduction activities

Change in emissions in this category (metric tons CO2e)

88,000

% change in emissions in this category

17

Please explain

The reduction in upstream transportation and distribution was primarily from a reduction in shipments by air.

Waste generated in operations

Direction of change

No change

Please explain

Though our production went up, focused efforts on reducing waste led to no increase in this category.

Business travel

Direction of change

Decreased

Primary reason for change

Change in physical operating conditions

Change in emissions in this category (metric tons CO2e)

11,000

% change in emissions in this category

58

Please explain

Travel lockdowns remained in place for the majority of the year and thus many meetings and events remained virtual over the course of the year.

Employee commuting

Direction of change

Increased

Primary reason for change

Change in output

Change in emissions in this category (metric tons CO2e)

4,000

% change in emissions in this category

2

Please explain

Though most of the year was still impacted by COVID-19, there was a slight increase in employees commuting by the end of fiscal 2021.

Use of sold products

Direction of change

Increased

Primary reason for change

Change in output

Change in emissions in this category (metric tons CO2e)

3,700,000

% change in emissions in this category

3

Please explain

While energy and refrigerant related performance of our products improved, it was not enough to compensate for the significant increase in product sales driven by accelerated global economic activity.

End-of-life treatment of sold products

Direction of change

No change

Please explain

Our shift to lower GWP refrigerants was enough to roughly compensate for the increased product sales in relevant products.

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year

Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	No
Consumption of purchased or acquired steam	Yes
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	13,871	1,294,399	1,308,270
Consumption of purchased or acquired electricity		219,148	430,302	649,451
Consumption of purchased or acquired steam		0	13,027	13,027
Consumption of self-generated non-fuel renewable energy		0		0
Total energy consumption		233,019	1,737,728	1,970,748

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application

Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Sustainable biomass

Heating value

HHV

Total fuel MWh consumed by the organization

0

Comment

Other biomass

Heating value

HHV

Total fuel MWh consumed by the organization

13,871

Comment

Other renewable fuels (e.g. renewable hydrogen)

Heating value

HHV

Total fuel MWh consumed by the organization

0

Comment

Coal

Heating value

HHV

Total fuel MWh consumed by the organization

0

Comment

Oil

Heating value

HHV

Total fuel MWh consumed by the organization

784,687

Comment

Gas

Heating value

HHV

Total fuel MWh consumed by the organization

509,712

Comment

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value

HHV

Total fuel MWh consumed by the organization

0

Comment

Total fuel

Heating value

HHV

Total fuel MWh consumed by the organization

1,308,270

Comment

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	0	0	0	0
Heat	1,308,270	1,308,270	13,027	13,027
Steam	0	0	0	0
Cooling	0	0	0	0

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in C6.3.

Sourcing method
Green electricity products from an energy supplier (e.g. green tariffs)

Energy carrier
Electricity

Low-carbon technology type
Wind

Country/area of low-carbon energy consumption
United States of America

Tracking instrument used
Other, please specify
Bills provided by utility company (which provides the green tariff)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
38,361

Country/area of origin (generation) of the low-carbon energy or energy attribute
United States of America

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2,020

Comment

Sourcing method

Unbundled energy attribute certificates (EACs) purchase

Energy carrier

Electricity

Low-carbon technology type

Renewable energy mix, please specify

Wind, Solar, Biomas, Landfill Gas, Geothermal, or Hydroelectric (certified low impact hydropower from he Low Impact Hydroelectric Institute)

Country/area of low-carbon energy consumption

United States of America

Tracking instrument used

Other, please specify

Green-e

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)

209,000

Country/area of origin (generation) of the low-carbon energy or energy attribute

United States of America

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

Comment

Unknown exact year of commissioning. They come from generation facilities that first began commercial operation within the past 15 years.

C8.2g

(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.

Country/area

United States of America

Consumption of electricity (MWh)

254,393

Consumption of heat, steam, and cooling (MWh)

11,755

Total non-fuel energy consumption (MWh) [Auto-calculated]

266,148

Country/area

China

Consumption of electricity (MWh)

98,939.04

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

98,939.04

Country/area

Mexico

Consumption of electricity (MWh)

51,933.48

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

51,933.48

Country/area

Japan

Consumption of electricity (MWh)

61,762.97

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

61,762.97

Country/area

Taiwan, China

Consumption of electricity (MWh)

40,104.52

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

40,104.52

Country/area

India

Consumption of electricity (MWh)

18,841.07

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

18,841.07

Country/area

United Kingdom of Great Britain and Northern Ireland

Consumption of electricity (MWh)

15,004.85

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

15,004.85

Country/area
Malaysia

Consumption of electricity (MWh)
14,205.02

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

14,205.02

Country/area
Canada

Consumption of electricity (MWh)
8,331.11

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

8,331.11

Country/area
Denmark

Consumption of electricity (MWh)
8,175.69

Consumption of heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

8,175.69

Country/area
Other, please specify
Rest of World

Consumption of electricity (MWh)

56,814.27

Consumption of heat, steam, and cooling (MWh)

0

Total non-fuel energy consumption (MWh) [Auto-calculated]

56,814.27

C-CG8.5

(C-CG8.5) Does your organization measure the efficiency of any of its products or services?

	Measurement of product/service efficiency	Comment
Row 1	Yes	

C-CG8.5a

(C-CG8.5a) Provide details of the metrics used to measure the efficiency of your organization's products or services.

Category of product or service

Heating & cooling systems

Product or service (optional)

Applied Commercial & Industrial Chillers and Heat Pumps

% of revenue from this product or service in the reporting year

Efficiency figure in the reporting year

7

Metric numerator

watt-hour

Metric denominator

watt-hour

Comment

We have the world’s largest portfolio of applied air-to-water and water-to-water chillers and heat pumps. These systems are used to heat and cool buildings, data centers, district systems, industrial and food processes, and more. Our industry-leading technologies enable ultra-high efficiencies, the use of low and ultra-low global warming potential refrigerants at reduced charge, oil-free magnetic bearing compressors, and high temperature-high lift applications. Taken together our applied chillers and heat

pumps enable our customers to dramatically cut their energy use, efficiently shift heating end uses from fossil fuel combustion to electricity, and reduce their carbon emissions.

Every applied chiller and heat pump is rated for energy efficiency in its specific customer application, generally expressed as a coefficient of performance (COP). COP ratings are dependent on both the technology and application, and can reach as high as 7.0.

Category of product or service

Heating & cooling systems

Product or service (optional)

Direct Expansion (DX) Residential & Commercial Air Conditioners and Heat Pumps

% of revenue from this product or service in the reporting year

Efficiency figure in the reporting year

21

Metric numerator

Btu

Metric denominator

watt-hour

Comment

Our DX residential and commercial portfolio includes ducted and ductless, split and packaged, air conditioners and heat pumps. Products are commonly available at efficiencies that significantly exceed those required by mandatory regulations globally, and launched in advance of regulatory compliance deadlines. Through this portfolio we enable residential and light commercial buildings to efficiently meet their comfort heating and cooling needs, as well as shift heating loads from fossil fuel combustion to electricity.
DX heating and cooling systems are generally rated for energy efficiency using a seasonally-adjusted Btu-per-watt hour methodology that varies globally with regulatory requirements. In North America, we use Seasonal Energy Efficiency Ratio (SEER) for residential cooling, Heating Seasonal Performance Factor (HSPF) for residential heating, and Integrated Energy Efficiency Ratio (IEER) for commercial cooling. Our products reach efficiency ratings as high as 21.

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description

Energy usage

Metric value

303

Metric numerator

7,094,686 Gigajoules (GJ)

Metric denominator (intensity metric only)

$23,415 Million USD

% change from previous year

11.5

Direction of change

Decreased

Please explain

The percentage decrease stated is the decrease in Energy Intensity fiscal year 20 versus fiscal year 21. This category includes gasoline, diesel, propane/LPG, butane, jet fuel, heavy fuel oil. Energy consumption is tracked at the facility, group and corporate levels. Since 2003, we have reported sustainability data in accordance with the Global Reporting Initiative (GRI) guidelines. This information is third-party verified with a limited assurance.

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	Johnson Controls has publicly committed to invest 75 percent of new product development research and development into climate-related innovation to develop sustainable products and services. Roughly 78% of our portfolio investments are related to smart building systems, energy efficiency, and building decarbonization, areas that will remain sources of R&D focus going forward. We were named Clarivate Top 100 Global Innovator 2021 and that this work explicitly includes energy efficiency. Our CEO George Oliver said, "Our engineering, research and development teams are reinvigorating our core

		product portfolio, empowering customers and communities to streamline building operations and deliver energy efficiencies that will help them meet their environmental goals." We have methodically grown our patent portfolio, reflecting R&D investments in OpenBlue and other digital offerings, energy optimization, and sustainability of services, systems and equipment. In fact, Johnson Controls was named Global Sustainability Changemaker and U.S. IoT Partner of the Year at Microsoft's annual awards. The Sustainability award was made for the significant societal impact Johnson Controls OpenBlue Enterprise Manager is having on boosting sustainability in buildings, improving ESG scores and enabling data-driven decision-making by customers. The IoT Partner award recognizes Johnson Controls for its OpenBlue platform which collects and primes data from IoT-connected devices inside buildings. It then uses machine learning to deliver insights enabling exceptional efficiency, occupant comfort and safety outcomes. Johnson Controls Tech Challenge showcases future-focused innovations that solve business challenges, tapping the expertise and creativity of Johnson Controls engineers around the world. Since 2021, a new Tech Sustainability segment has been added to the annual Tech Challenge event; a reflection of the company's global sustainability commitments. It encourages employees to submit innovative ideas and concepts to drive our sustainability commitments. Our colleagues collaborated across 10 countries to develop sustainability related products, offerings, services and processes. The first year of the event witnessed 106 unique pursuits from 143 colleagues, and this year the number nearly doubled to an incredible 261 colleagues participating.

C-CG9.6a

(C-CG9.6a) Provide details of your organization's investments in low-carbon R&D for capital goods products and services over the last three years.

Technology area

Smart systems

Stage of development in the reporting year

Large scale commercial deployment

Average % of total R&D investment over the last 3 years

61 - 80%

R&D investment figure in the reporting year (optional)

Comment

Specific to smart systems, our new product development and introduction R&D spending is focused on our OpenBlue platform and expanding its suite of capabilities. These solutions are an enabler of smart building buildings, connect discrete building systems, and optimize building operations to deliver healthy, secure, efficient, and net zero outcomes. Examples of recent product launches from new product development activities include:
1. The OpenBlue Connected Chillers platform, which uses predictive analytics of real-time data points from our customer's chillers to fully optimize performance, boost product efficiency, and anticipate potential faults before they occur.
2. The Metasys 12 CL Controller, which includes new firmware upgrades that take full advantage of our Metasys Building Management System feature sets, enabling deeper building energy optimization.

The reported percentage of total R&D investment over the last 3 years represents our investment in all sustaiability products and services; we do not break out this number by technology area.

Technology area

Energy efficient heating and cooling systems

Stage of development in the reporting year

Large scale commercial deployment

Average % of total R&D investment over the last 3 years

61 - 80%

R&D investment figure in the reporting year (optional)

Comment

Specific to heating and cooling systems, our new product development and introduction R&D spending is focused on unitary, applied, and industrial heat pumps and chillers, delivering increasing levels of energy efficiency and utilizing low and ultra-low GWP refrigerants. These solutions enable comfort and process heating and cooling, and dramatically reduce our customer's carbon footprint by reducing energy consumption and shifting from fossil combustion to electric end uses. Examples recent product launches from of new product development activities include:
1. The third generation of our Johnson Controls-Hitachi Variable Refrigerant Flow systems, which includes FrostWash technology to dramatically boost heat pump efficiency at low outdoor ambient conditions down to -20 degrees Fahrenheit.
2. The modular 4 pipe heat pump chiller for our Asia Pacific markets, which enables simultaneous hydronic heating and cooling at extremely high efficiencies, and his highly customizable to meet a broad range of heating and cooling demands.

The reported percentage of total R&D investment over the last 3 years represents our

investment in all sustaiability products and services; we do not break out this number by technology area.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

GHG JCI FY 2021 Verification Statement.pdf

Page/ section reference
1-3

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 location-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

GHG JCI FY 2021 Verification Statement.pdf

Page/ section reference
1-3

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

Scope 2 approach
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement

GHG JCI FY 2021 Verification Statement.pdf

Page/ section reference

1-3

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category

Scope 3: Purchased goods and services
Scope 3: Capital goods
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
Scope 3: Upstream transportation and distribution
Scope 3: Waste generated in operations
Scope 3: Business travel
Scope 3: Employee commuting
Scope 3: Use of sold products
Scope 3: End-of-life treatment of sold products

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Complete

Type of verification or assurance

Limited assurance

Attach the statement

GHG JCI FY 2021 Verification Statement.pdf

Page/section reference

1-3

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C9. Additional metrics	Other, please specify Waste	International Standard on Assurance Engagements (ISAE) 3000 Revised, Assurance Engagements Other than Audits or Reviews of Historical Financial Information (effective for assurance reports dated on or after Dec. 15, 2015), issued by the International Auditing and Assurance Standards Board.	Our goal is that 25 percent of our manufacturing locations will be landfill free by 2025. In 2021, 19.5 percent of our manufacturing locations, 19 manufacturing and 24 total locations, have a 100 percent diversion rate and are recognized as zero landfill. As part of the continued commitment from employees to reduce our impact on the environment and ensure we protect our world for future generations, we are proud that 24 facilities are now recognized as attaining zero waste to landfill in fiscal 2021. These facilities are located in all regions of the world, making environmental sustainability a truly global effort. This achievement directly improves the communities in which we operate. 1, 2

[1]Waste JCI FY 2021 Verification Statement.pdf

[2]Waste JCI FY 2020 Verification Statement.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?

Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.

EU ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

EU ETS

% of Scope 1 emissions covered by the ETS

0.14

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

0

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO2e

614

Verified Scope 2 emissions in metric tons CO2e

0

Details of ownership

Other, please specify

Our company plane is managed through FL Aviation.

Comment

FL Aviation participates in the EU ETS program and we charter our company plane from them. The numbers given are for FY21.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

FL Aviation Corporation participates in the EU ETS as an Ireland-registered operator. FL Aviation corporation manages our corporate aircraft and the associated emissions compliance. FL Aviation calculates carbon emissions for the compliance year and purchases needed offset units on behalf of Johnson Controls to comply with the trading scheme. They also track allocations and credit JCI from their program.

Johnson Controls is committed to improving environmental performance across our own global operations, including emissions associated with travel and owned aircraft. We have enterprise-wide, global environmental goals to help us enhance our operational excellence, reduce our exposure to climate change risks, reduce our reliance on natural resources, and save money.

Johnson Controls has one dedicated aircraft for necessary executive travel. We have evaluated and set an implicit price on carbon of $28 MT/CO2e to drive decision-making and implementation of low-carbon solutions. Part of our reason for implementing a carbon price is to positively influence our own behavior in how we operate as an organization; driving more environmentally thoughtful and efficient business behavior. We reduce non-critical travel - travel where it is not vitally necessary to appear in person for the successful managing of our business - through the use of video conferencing. This has resulted in a reduction in greenhouse gas emissions from the use of our aircraft by over 500 metric tons of CO2e in 2020. This is one example of an initiative that will help us reduce our emissions and reduce our carbon tax-related allowances for current and future carbon tax programs we are subject to. We continue to look for innovative solutions for decreasing our environmental and carbon footprint through deliberate strategic initiatives.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Stakeholder expectations
Change internal behavior
Drive energy efficiency
Drive low-carbon investment
Stress test investments
Identify and seize low-carbon opportunities

GHG Scope

Scope 1
Scope 2

Application

Influence on business decisions: We use the costs as a reference point for decarbonization projects aligned with driving our commitment to reduce Scope 1 & 2 emissions 55% by 2030 and Net Zero by 2040.

The implicit price is calculated using the total annual investment divided by the annual MT of CO2e abated. The price is used as input to prioritize projects; however, it is not the only criteria used to guide our decision to invest in energy or emissions reduction projects. In 2022, Johnson Controls invested in several projects with an implicit price greater than $50 MT CO2e.

In 2021, the implicit price of carbon is compared against $28 / MT CO2e – the median price of carbon reported to CDP in 2020 by 116 companies in the Manufacturing segment. According to a study done by McKinsey in 20202, based on the 2019 CDP responses, the average internal carbon price within the Industrials sector was $20 / MT CO2e.

Actual price(s) used (Currency /metric ton)

28

Variance of price(s) used

Johnson Controls utilizes an implicit price on carbon as a reference point for energy efficiency and emissions reduction projects. The implicit price is calculated using the total annual investment divided by the annual MT of CO2e abated. The price is used as input to prioritize projects; however, it is not the only criteria used to guide our decision to invest in energy or emissions reduction projects.

Type of internal carbon price

Implicit price

Impact & implication

Johnson Controls utilizes an implicit price on carbon as a reference point for energy efficiency and emissions reduction projects.
The implicit price is calculated using the total annual investment divided by the annual MT of CO2e abated. The price is used as input to prioritize projects; however, it is not

the only criteria used to guide our decision to invest in energy or emissions reduction projects.

In 2021, the implicit price of carbon is compared against $28 / MT CO2e – the median price of carbon reported to CDP in 2020 by 116 companies in the Manufacturing segment. According to a study done by McKinsey in 20202, based on the 2019 CDP responses, the average internal carbon price within the Industrials sector was $20 / MT CO2e.

We used the implicit cost of carbon for a major Scope 1 & 2 emissions reduction project through which eight of our largest US facilities are undergoing an energy, water and GHG reduction project. The investments include replacing current HVAC equipment with our latest, most efficient, lowest-GWP technologies, our OpenBlue Enterprise Manager digital tools for measurement and controls systems, and equipment upgrades to reduce refrigerant loss.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers
Yes, our customers/clients
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

7

% total procurement spend (direct and indirect)

51

% of supplier-related Scope 3 emissions as reported in C6.5

Rationale for the coverage of your engagement

All suppliers are expected to conduct their business in a safe, sustainable manner, consistent with all laws and regulations, and with a focus on consistently reducing their environmental footprint. Suppliers that are compliant and demonstrate high performance on their annual sustainability reviews will be considered for preferred supplier status as a strategic partner. Suppliers who refuse to abide by the Code of Ethics or have significant environmental or social performance issues that cannot be resolved in a timely manner will not be considered for growth or new business opportunities.

We identify a set of preferred suppliers who are responsible for the majority of our total spend. The number of preferred suppliers is less than 25% of our total, global supply base and are responsible for over 50% of our total spend. Preferred suppliers are expected to be evaluated annually on their sustainability performance.

Impact of engagement, including measures of success

In 2021, Johnson Controls increased the weight of Sustainability Rating Survey (waste reduction, energy usage/water consumption, and diverse business involvement) to 21 percent of preferred suppliers' global scorecards. This key metric is now equal in weight to cost, quality and delivery scorecard metrics. Also in 2021, we started a transition from the Sustainability Rating Survey to EcoVadis, as the tool to monitor our global supply chain. As of October 1, 2022, all preferred suppliers are required to fill out an EcoVadis assessment. In EcoVadis there are clear risk rating thresholds for the overall organization as well as within each sub-section of environment, labor & human rights, supply chain, and ethics with any rating below 45 is considered at risk. EcoVadis also provides guidance for corrective actions to be completed by the supplier.

Our team of 1000+ procurement managers engages with suppliers on their sustainability programs and product roadmaps. Each week the procurement leadership team evaluates suppliers, new purchasing opportunities, and current sustainability ratings.

In 2021, we also launched a newly formed Supplier Council, representing a cross section of procurement categories, to share sustainability best practices and provide input and feedback to our sustainability program. The Supplier Council is expected to be first adopters of our new programs, including the EcoVadis assessment.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement & Details of engagement

Collaboration & innovation

Other, please specify

Business partnership with customers to jointly innovate on products and services that will help customers reduce their GHG emissions

% of customers by number

100

% of customer - related Scope 3 emissions as reported in C6.5

92

Please explain the rationale for selecting this group of customers and scope of engagement

Johnson Controls has successfully made the shift to providing sustainable solutions to all our customers. Our Scope 3, Product in Use Category, accounts for 92% of our total Scope 3 emissions, underscoring the need to engage across segments and regions to help all customers to reduce GHG emissions.

We developed OpenBlue Net Zero Buildings to do just that. The offering is an as-a-service model where Johnson Controls offers products and services to help our Customers reduce their total emissions footprint, including emissions generated through the operation of the Buildings.

Impact of engagement, including measures of success

We offer a broad product portfolio powered by OpenBlue, together with our direct channel service and solutions capabilities, to address customers' needs in improving energy efficiency and reducing GHG emissions. OpenBlue Net Zero Buildings as a Service is a turnkey solution for companies looking to achieve net zero carbon and renewable energy goals. It offers real-time performance dashboards that analyze energy, water, materials and greenhouse gas emissions.

Our line of YORK chillers includes the YORK YZ magnetic-bearing centrifugal chiller, the most efficient chiller in the world. In addition to delivering a 35% improvement in energy efficiency over a conventional chiller, it also utilizes a next-gen refrigerant with a 99% reduction in global warming potential and a refrigerant charge up to 60% lower than other systems. We are introducing ducted systems that meet and exceed the '23 Department of Energy standards for energy efficiency well ahead of the compliance date, including our YORK Select line of rooftop units, which are 22% more efficient than these standards. Lastly, our world-class heat pumps. These products enable homes, buildings, campuses, and district systems to achieve efficient, beneficial electrification by shifting away from direct fuel combustion.

Johnson Controls-Hitachi launched its latest variable refrigerant flow heat pump platform. It achieves an approximate 50% improvement in energy efficiency over the first-gen design, offers low ambient heating options to deliver reliable operation in colder climates, and features a frost wash function to keep the outdoor heat exchanger clean while boosting energy performance. We also launched a new side flow product platform to improve design flexibility and performance. The modular system features a 40%

smaller footprint and 15% lower refrigerant charge when compared to conventional systems. Both help provide heating and cooling without the use of on-site fuel combustion.

We also help our customers achieve energy savings using Energy Performance Contracting. We deploy equipment upgrades and management services to deliver guaranteed energy savings and help customers achieve GHG reductions. Since 2000, performance contracting projects have helped avoid more than 35.2 million metric tons CO2e and are set to save more than $7.2B through energy and operational savings over the project term.

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

Below are some of the commitments and public statements we made in in the last two years that demonstrate our engagement in a shared vision for a safer, more sustainable world.

Our CEO George Oliver testified in front of the U.S. Senate Budget Committee April 15, 2021, at a hearing on climate change. In his statement to the committee, Oliver said Johnson Controls has been reporting its emissions and taking action to reduce its footprint for 20 years. “At Johnson Controls, sustainability is our business.” he said. “Through an aggressive series of enterprise-wide initiatives, we have cut our energy intensity by more than 50% and our greenhouse gas intensity by more than 70%.” Oliver also discussed how performance contracts between the private sector and governments can maximize climate-friendly building infrastructure improvements. Oliver warned that inaction on climate change was intolerable and urged that: The United States and the international community must aggressively reduce GHG emissions. "
In an opinion piece by Johnson Controls' CEO George Oliver in The Hill published on March 31, 2021, he called for strengthened regulation of green finance to unlock the needed trillions to address climate change. His recommendations included developing definitions and parameters around green (and climate-related) bonds in cooperation with the global financial community, harmonizing the standards for reporting emissions and climate data, and encouraging the administration to engage the private sector in discussions on how to identify and disclose climate risks and opportunities in a way that is meaningful, measurable and transparent.

Our CEO George Oliver joined President Joe Biden for the president’s virtual Leaders Summit on Climate. The two-day summit featured world leaders, other governmental officials and business leaders. Oliver, the only industrial CEO to present, said Johnson Controls would do its part to help the United States meet its goal to cut emissions by about 50 percent by the end of the decade. “In my role as Chairman and CEO of Johnson Controls, a global leader in smart, healthy and sustainable buildings, we’re eager to drive harder and faster to cut the 40% of greenhouse gases that come from buildings.”

The Climate Pledge - We joined The Climate Pledge, a commitment co-founded by Amazon and Global Optimism. Signatories of the Pledge commit to reaching net-zero carbon emissions by 2040, ten years ahead of the goal set out in the United Nations Paris Climate Agreement.

Three Percent Club - Launched at the U.N. Climate Action Summit in September 2019, the Three Percent Club is a new coalition that includes countries, companies and international organizations committed to driving a three percent global increase in energy efficiency each year – a move that can help limit climate change and increase global prosperity. It builds on International Energy Agency research that shows the right efficiency policies could deliver more than 40 percent of the emissions reductions needed to reach the goals of the Paris Agreement – and all without the need for new technology.

EP100 Cooling Challenge - Johnson Controls was the first U.S. company to commit to the EP100 Cooling Challenge. We are leading by example on efficient cooling across our own operations and are joining businesses around the world who seek to cool their operations in the most energy-efficient ways possible. International nonprofit The Climate Group partnered with the Alliance to Save Energy to launch this new initiative in September 2019.
United Nations Global Compact Network USA

TED Countdown - Katie McGinty, Johnson Controls' Chief Sustainability Officer, teamed up with TED Countdown and The Climate Pledge to develop an inspiring and informative video outlining the key role buildings play in net zero strategies and driving sustainability. Businesses across the globe are committing to measurable climate action - but what exactly are they doing, and why? In collaboration with TED Countdown and The Climate Pledge, Katie McGinty, Vice President and Chief Sustainability and External Relations Officer, discusses the key role buildings play in net zero strategies and driving sustainability.

Alliance to Save Energy (ASE) - Katie McGinty, Johnson Controls' Chief Sustainability Officer, is the 2nd Vice Chair on the board of directors of ASE, a nonprofit, bipartisan alliance of business, government, environmental, and consumer leaders working to expand the economy while using less energy.

Ms. McGinty is also a highly visible thought leader in this space. She regularly engages with the public through various learning mechanisms like interviews, TED talks, webinars, and has been recognized by various sustainability focused publications as a global leader in the field of corporate sustainability.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization’s purchasing process?

Yes, suppliers have to meet climate-related requirements, but they are not included in our supplier contracts

C12.2a

(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization's purchasing process and the compliance mechanisms in place.

Climate-related requirement

Climate-related disclosure through a non-public platform

Description of this climate related requirement

In 2021, we doubled the weight the Sustainability Rating has on supplier scorecards. Now, sustainability is equal to cost, quality and delivery in supplier performance evaluations.

We partnered with EcoVadis, a globally recognized sustainability assessment ratings agency, to adopt a systematic ratings program to evaluate suppliers based on their environmental, business, and social practices. EcoVadis not only evaluates disclosures submitted from suppliers but utilizes a global monitoring system to evaluate business practices.

We also formed a Supplier Council to share sustainability best practices, evaluate and launch new sustainability programs, and contribute to our long-term strategy for supplier engagement.

% suppliers by procurement spend that have to comply with this climate-related requirement

80

% suppliers by procurement spend in compliance with this climate-related requirement

80

Mechanisms for monitoring compliance with this climate-related requirement

Supplier scorecard or rating

Response to supplier non-compliance with this climate-related requirement

Retain and engage

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers
Yes, we engage indirectly through trade associations

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?

Yes

Attach commitment or position statement(s)

https://www.johnsoncontrols.com/2022sustainability

Describe the process(es) your organization has in place to ensure that your engagement activities are consistent with your overall climate change strategy

Our Sustainability and Government Relations teams are co-located. Our Government Relations team has responsibility for our policy engagement on environmental and energy issues. We have an ESG, Policy, and Regulatory Leadership Committee made up of our Product Business Unit General Managers and leaders from each functional team. It is chaired by the VP & Chief Sustainability & External Relations Officer who is a member of our Executive Committee. The Committee ensures consistency on both our policy advocacy and sustainability activities across the organization.

We use annual governmental affairs meetings and other regular business meetings to ensure that our direct and indirect activities that influence policy are consistent with our overall climate change strategy and policy.

Overall implementation of sustainability is the responsibility of company management with oversight by the CEO, his Executive Committee and the Governance and Sustainability Committee of the Board of Directors. Our Energy and Climate Change Policy helps guide and ensure consistency across our climate change strategy and work. Our leadership also encourages employees to have an annual performance goal linked to sustainability. In 2022, more than 13,000 employees tied their annual goals to sustainability.

Our policies, including those relating to climate change and associated strategies are publicly available on our website.

Key policies and principles that outline our climate change processes and expectations that are posted on this page include:

1) Position on Energy and Climate Change,
2) Energy and Climate Change Policy,
3) Human Rights and Sustainability Policy

4) Our commitment to the UN Global Compact principles
5) COP22 Position Statement.

C12.3a

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

Focus of policy, law, or regulation that may impact the climate

Other, please specify

HFC Regulations

Specify the policy, law, or regulation on which your organization is engaging with policy makers

We support the drive to ultra-low GWP refrigerants and think action on climate overall is urgent. . To that end, we strongly support policies at the national level to transition the HVAC sector toward refrigerants that protect the climate. We have for example been a force in advocating for the successful passage of the AIM Act in the US and are working towards ratification of the Kigali Amendment as well.

Policy, law, or regulation geographic coverage

Global

Country/region the policy, law, or regulation applies to

Your organization's position on the policy, law, or regulation

Support with no exceptions

Description of engagement with policy makers

Johnson Controls is engaged on refrigerant policy globally. We are committed to develop new products and improve and expand our existing low-global warming potential (GWP) portfolio. In Europe, we have worked with the European Partnership for Energy and the Environment (EPEE) on the negotiation of the European F-Gas Regulation and Andrea Vallejo (VP & GM of JCI's Global Industrial Refrigeration Business Unit) was elected as Chair of the organization. We are also very engaged in the European Heat Pump Association (EHPA), an organization that has additional resources to engage in advocacy and we are working with the American Chamber of Commerce to the EU to engage with the European Parliament. Overall, we are holding discussions with government officials at EU Commission, EU Council and EU Parliament levels.

We seek to influence HFC policies through our direct and person advocacy and with partners like the Alliance for Responsible Atmospheric Policy (ARAP) and Air-conditioning, Heating, and Refrigeration Institute (AHRI), the latter being a formal trade association of JCI. These organizations support implementation of the Kigali

Amendment to the Montreal Protocol, which will significantly phase-down the use of HFCs in both developed and developing countries by 2033.

Specific to U.S. policy, we advocated for passage of the American Investment in Manufacturing (AIM) Act, which gives the U.S. Environmental Protection Agency (EPA) specific authority to regulate HFCs consistent with the Kigali Amendment. Since its passage, we have petitioned EPA to establish new regulations for HFC use in air conditioning equipment manufactured by JCI per the AIM Act. We have been actively involved in encouraging the U.S. Administration and Congress to ratify the Kigali Amendment. In addition we have participated in the Alternative Refrigerant Evaluation Program conducted by AHRTI to evaluate the performance of various low-GWP alternatives and publish the data for the industry to use in selecting new fluids to comply with future low GWP refrigerant requirement.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Focus of policy, law, or regulation that may impact the climate

Other, please specify

Energy Efficiency

Specify the policy, law, or regulation on which your organization is engaging with policy makers

We strongly support advancing energy efficiency policy at the U.S. Federal level, especially when such policies can improve efficiency at the systems level. A key opportunity for building energy efficiency is through performance contracting, and we strongly support federal policies which set efficiency and emissions targets that can be achieved through ESPCs. Additionally, we are supportive of legislative efforts to bolster regulatory bodies charged with advancing energy efficiency RD&D and policy.

Policy, law, or regulation geographic coverage

Global

Country/region the policy, law, or regulation applies to

Your organization's position on the policy, law, or regulation

Support with no exceptions

Description of engagement with policy makers

In the US, we work directly with policy makers, as well as with our allied industry groups and NGOs. At the U.S. Congressional level, we supported the Infrastructure Investment

and Jobs Act, which was signed into law that would direct funding for energy efficiency upgrades, grid modernization, and promote the use of energy savings performance contracts.

We were one of very few companies to join an amicus brief to the US Supreme Court in the West Virginia v. Environmental Protection Agency case. The brief supported EPA'a authority to regulate carbon dioxide emissions related to climate change. https://www.supremecourt.gov/DocketPDF/20/20-1530/211279/20220125134654422_Brief.pdf

Also, we have encouraged the U.S. Congress on the inclusion building infrastructure as part of the response to COVID-19, including funding to state and local agencies to make mission critical buildings more flexible, efficient, and resilient, and to leverage private financing for such upgrades. We are also actively engaged in the development of energy efficiency standards covering our products and support their advancement in a regular manner.

At EU level, we have worked with several EU Trade associations where we hold key positions to help fight for energy efficiency regulations (JCI leaders on EuroAce Board chairing EPPE, and chairing energy efficiency working groups with Amcham EU and EuBAC). With the EU Commission and now with EU Parliament and EU Council, we are working to encourage action on the EU Green Deal and EU Fit for 55 package.

We strongly support the EU Energy Efficiency Directive, where heat pumps and digital solutions are identified as key solutions to enhance energy efficiency of buildings. We also are grateful for provisions in the he Energy Efficiency Directive to mandate more transparency requirement for energy use of data centers. We are pleased with the identification of energy efficiency of industrial installations as district heating and cooling offers increased energy efficiency gains by using heat pumps. And, we have called for binding EU level energy efficiency targets and support the increase of the existing targets.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Focus of policy, law, or regulation that may impact the climate

Renewable energy generation

Specify the policy, law, or regulation on which your organization is engaging with policy makers

We strongly support the expansion of tax credits for renewable energy. We support policies that place a price on carbon emissions, such as a Clean Energy Standard.

Policy, law, or regulation geographic coverage

Global

Country/region the policy, law, or regulation applies to

Your organization's position on the policy, law, or regulation

Support with no exceptions

Description of engagement with policy makers

We have supported inclusion of enhanced incentives for the use of alternative energy in the Reconciliation Bill being considered by the US Congress. At the Congressional level, these include wind, solar, fuel cells, hydropower, and others.

In Latin America, we have worked directly and in partnership with various associations in favor of Renewable Energy adoption in the region. In Mexico, we actively engage with Federal Government and Congress on the importance of Renewable Energy for the development of the country and a key element to be considered on the Energy Bill discussed in Congress (at the end the outcome was the withdrawal of the bill). For example, our Chief Sustainability Officer was among a small group of industry leaders brought together by the US Department of State to meet directly with Mexico President Obrador and urge development of the country's renewable resources.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Focus of policy, law, or regulation that may impact the climate

Other, please specify

Federal Funding

Specify the policy, law, or regulation on which your organization is engaging with policy makers

We support federal funding of climate-related activities, research and mitigation.

Policy, law, or regulation geographic coverage

National

Country/region the policy, law, or regulation applies to

United States of America

Your organization's position on the policy, law, or regulation

Oppose

Description of engagement with policy makers

We have engaged directly in multiple efforts to oppose proposed legislation that would remove climate-related language and cut funding for key energy efficiency programs from appropriations bills.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Focus of policy, law, or regulation that may impact the climate

Other, please specify

US State Climate Action Plans

Specify the policy, law, or regulation on which your organization is engaging with policy makers

We strongly urge states and municipalities to include building energy efficiency policies as part of their efforts to address climate change. Deep decarbonization can be achieved at the state level through policies addressing building codes, access and benchmarking of building data, leveraging performance contracting and utility demand management programs, and more and we work hard in support of these initiatives.

Policy, law, or regulation geographic coverage

Sub-national

Country/region the policy, law, or regulation applies to

United States of America

Your organization's position on the policy, law, or regulation

Support with no exceptions

Description of engagement with policy makers

Many U.S. States and cities are developing and executing on Climate Action Plans for meeting deep decarbonization goals, often to align with the targets established in the Paris Accords. We are supportive of these efforts and engage where possible to advocate for the inclusion of policies aimed at improving energy efficiency and reducing emissions of the built environment. For example, we are members of the group "We Are Still In" which consists of elected leaders, businesses, and other organizations who support climate action to meet the Paris agreement. Engagement can take on different forms: it can be informal guidance to a state stakeholder on topics such as the application of a specific technology, or it can be highly formal, such as in Wisconsin,

where we had a seat on the Governor's Task Force on Climate. Moreover, see above discussion of our CEOs testimony to the US Senate and participation the White House Climate Change Summit.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.3b

(C12.3b) Provide details of the trade associations your organization engages with which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association

Other, please specify

European Alliance of Companies for Energy (EuroACE)

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

EuroACE is a coalition of companies which provide energy efficiency products and services. The mission of EuroACE is to work together with the European institutions to help Europe move towards a more efficient use of energy in buildings, thereby contributing to the EU's commitments on energy efficiency, carbon emission reductions, job creation and energy security. EuroACE believes in the increase energy efficiency by reducing demand for imported energy, contributing to the reduction of CO2 emissions, and encouraging building renovation towards Near Zero Energy Buildings (NZEBs). EuroACE is managing as well Renovate Europe, a political communications campaign with the ambition to reduce the energy demand of the EU building stock by 80% by 2050 compared to 2005 levels.

We are a member of EuroACE and work to promote our values of energy efficiency and sustainability in their advocacy.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

The Business Council for Sustainable Energy (BCSE)

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

BCSE is a coalition of companies and trade associations from the energy efficiency, natural gas and renewable energy sectors, and also includes independent electric power producers, investor-owned utilities, public power, commercial end-users and project developers and service providers for environmental markets. The Business Council for Sustainable Energy advocates energy and environmental policies that promote markets for clean, efficient and sustainable energy products and services. The Council strives to be the premier organization promoting clean energy technologies, energy efficiency, renewable energy and natural gas to achieve the goals of sustainable development, including a cleaner environment, a prosperous economy and greater energy security.

The Business Council for Sustainable Energy aims to:
• Promote strategies that accelerate the deployment of energy efficiency, renewable energy resources and natural gas;
• Implement cost-effective programs and policies that recognize the environmental attributes of energy sources;
• Advocate policies that increase the efficiency of the U.S. economy and improve energy security; and
• Encourage market-based initiatives for energy and environmental policies. More about this organization at: http://www.bcse.org

Mark Lessans, Director of Regulatory and Environmental Affairs, Johnson Controls, is on the board of BSCE of the organization and as such he continues to promote energy efficiency and the other core values of Johnson Controls.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

Alliance to Save Energy (ASE)

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

The Alliance to Save Energy is a non-profit organization that promotes energy efficiency worldwide through research, education and advocacy. ASE encourages business, government, environmental and consumer leaders to use energy efficiency as a means to achieve a healthier economy, a cleaner environment and greater energy security. ASE views energy efficiency as an immediate and necessary part of the solution to global climate change. Climate change affects the environment and people throughout the world. Energy efficiency is the most readily available and cost-effective solution to climate change. The Alliance supports the creation of a domestic cap-and-trade program that sets a carbon price, implements complementary energy efficiency policies and invests in complementary energy efficiency programs. A strong climate policy will spur unprecedented levels of energy efficiency and result in smarter resource use in various economic sectors by reducing the costs and increasing the pace of cutting greenhouse gas emissions. In short, energy efficiency is an immediate and necessary part of the solution to global climate change.

Katie McGinty, VP & Chief Sustainability & External Relations Officer, Johnson Controls, is on the Board of Directors of ASE, and as such she works to promote the energy

efficiency programs and goals of the Alliance because energy efficiency is the most readily available and cost-effective solution to climate change.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

American Council for an Energy-Efficient Economy

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

The American Council for an Energy-Efficient Economy (ACEEE) is a non-profit organization that acts as a catalyst to advance energy efficiency policies, programs, technologies, investments, and behaviors. ACEEE provides research and thought leadership for energy efficiency policies that help address climate change.

Through our membership with ACEEE we play an active role in shaping legislation and regulation that positions energy efficiency in buildings as a critical piece of decarbonization policy.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

Building Decarbonization Coalition (BDC)

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

The Building Decarbonization Coalition unites building industry stakeholders with energy providers, environmental organizations and local governments to help electrify California's homes and workspaces with clean energy. Through research, policy development, and consumer inspiration, the BDC is pursuing fast, fair action to accelerate the development of zero-emission homes and buildings that will help California cut one of its largest sources of climate pollution, while creating safe, healthy and affordable communities.

Mark Lessans, Director of Regulatory and Environmental Affairs, Johnson Controls, is on the board of BDC and promotes optimal pathways to decarbonization through building electrification, while also prioritizing energy efficiency, grid management, and consumer cost-effectiveness.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

Air Conditioning, Heating and Refrigeration Institute (AHRI)

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

AHRI is the trade association that represents manufacturers of air-conditioning, heating, commercial refrigeration, ventilation and water heating equipment. AHRI encourages the adoption of energy efficient equipment in homes and businesses. AHRI strives to work with environmental advocates and federal agencies to craft energy efficiency policies that will help reduce national energy consumption. AHRI also supports efforts by the U.S. to engage in negotiations to include a phase down of HFCs in the Montreal Protocol. AHRI also supports policies and incentives to promote recovery, recycling, reclaiming and/or destruction of HFCs, and to develop low-GWP compounds and products that use low GWP compounds.

We support AHRI's efforts to promote the development of energy efficient equipment for heating and cooling, as well as the phase down of HFCs and the efforts to develop low GWP compounds. Doug Schuster, VP/GM of Ducted Systems, Johnson Controls, sits on the board of directors of AHRI.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

European Partnership for Energy and the Environment (EPEE)

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

EPEE advocates for stronger requirements for energy efficiency in equipment and buildings, and integration of renewables in buildings. EPEE represents the heating, cooling and refrigeration industry in Europe and strongly supports the energy efficiency first principle.

JCI has strong participation in EPEE, including the following:
a) Andrea Vallejo, VP and GM Global industrial Refrigeration is Chair of the Board and through this role active in promoting energy efficiency.
b) Strategy Group (Board of Directors): Andrea Lucia Vallejo, Vice Chair, VP and GM Global Industrial Refrigeration Products
c) Steering Committee: Christina von Westernhagen, Director of European Government Relations
d) Energy Efficiency Working Group: Christina von Westernhagen, Chair
e) Ivo Eiermann, Product Manager, Applied Equipment, Eco-Design working group (standards included). As a team, we contribute to EPEE's work regarding the development of effective European policies and regulations (F- Gas, Eco-Design, Energy Efficiency, Renewables etc.), standards, in order to achieve a long-term sustainability agenda.
f) Giovanni Egisto, EcoDesign Working Group

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

European Buildings Automation Controls Association (EU-BAC)

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

EU-BAC aims to increase energy efficiency and flexibility in buildings by optimizing the use of building automation controls and building energy management systems.

Our company is represented in EU-BAC as follows:

a) Mario Lieder, Senior Director HVAC-R Germany: Board and Building Automation sector group
b) Marianna Duarte, Solutions Manager Digital Solutions and Smart Buildings: Building Automation sector group, Marketing & Communications Panel and TG IoT Strategy paper and Smart Readiness Indicator
c) Christina von Westernhagen, Director of Government Relations Europe, Advocacy panel
d) Klaus Adolph Lead Engineer EcoDesign LOT 38 Support: - Interoperability

Main priorities of the team are: inclusion of BACs in the Eco-Design regulation, advocating for mandatory requirements for BACs in the non-residential sector, ensure policy implementation, leading discussion leading discussions on Smart Buildings, Smart Indicator and Internet of Things, etc.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

National Association of Manufacturers

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We have already influenced them to change their position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

Historically, NAM's position on climate change was only partially aligned with Johnson Controls. However, due to the efforts of JCI and others, NAM has become more aggressive on climate change policy -- calling for action to cut greenhouse gas emissions. For example, NAM has called on Congress to enact a single, unified climate policy. NAM supports ratification of the Kigali Amendment and supported US Federal legislation (AIM Act) to phase out hydrofluorocarbons (HFCs). The Kigali Amendment would reduce the global warming equivalent of 4.1 billion tons of CO2 per year by 2050. In addition, JCI has worked closely with NAM to promote increased investment in energy efficiency. The International Energy Agency found that energy efficiency alone could meet up to 40 percent of the Paris Agreement's global GHG reduction goals. In addition, a recent study by the Natural Resources Defense Council projected that to reach an 80 percent GHG emissions reduction goal, the U.S. could get almost 42 percent of the way by maximizing energy-efficiency investments and strategies.

Jeff Williams, President, Global Products for Johnson Controls, is on the NAM Board of Directors. We actively engage with NAM's energy task force to continue to shape NAM's policies embracing action on climate change and support for energy efficiency policies.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Trade association

Business Roundtable

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

Business Roundtable is an association of chief executive officers of America's leading companies working to promote a thriving U.S. economy and expanded opportunity for all Americans through sound public policy. The Business Roundtable has launched a public campaign to foster greater awareness of their members' contribution to sustainability, including Johnson Controls.

George Oliver, Johnson Controls Chairman and CEO, serves as a member of BRT and is the chairman of the BRT's Energy & Environment Committee. Mr. Oliver was the only industrial CEO to participate in the White House's "Leaders Summit on Climate." Just prior to the White House Summit, Mr. Oliver testified before Chairman Bernie Sanders and Members of the U.S. Senate Budget Committee where he stressed the risks of inaction on climate. This year, Mr. Oliver also joined fellow Business Roundtable members on an episode of BRT TV to discuss the efforts of America's job creators to address climate change.

The BRT believes corporations should lead by example, support sound public policies and drive the innovation needed to address climate change. To this end, the United States should adopt a more comprehensive, coordinated and market-based approach to reduce emissions. This approach must be pursued in a manner that ensures environmental effectiveness while fostering innovation, maintaining U.S. competitiveness, maximizing compliance flexibility and minimizing costs to business and society. International cooperation and diplomacy backed by a broadly supported U.S. policy will be the key to achieving the collective global action required to meet the scope of the challenge and position the U.S. economy for long-term success.

The BRT supports a market-based emissions reduction strategy that includes a price on carbon where it is environmentally and economically effective and administratively feasible, but it does not endorse any specific market-based mechanism. This approach would reduce the administrative complexity and uncertainty associated with a regulatory approach to limiting emissions and help ensure that U.S. companies remain competitive. It would also send an important market signal that would lead to greater efficiency; technological innovation; and deployment of the low-, no- and negative-GHG emissions technologies that will be necessary for reducing GHG emissions by at least 80 percent by 2050.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

National Association of Energy Service Companies (NAESCO)

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

The National Association of Energy Service Companies is the leading advocacy and accreditation organization for Energy Service Companies (ESCOs) and is dedicated to modernizing America's building infrastructure through performance contracting. Uniting the energy service industry, NAESCO promotes favorable government policies; sponsors a rigorous accreditation program; provides training and education; and champions ESCOs interests across the Nation.

Chuck McGinnis, VP Performance Infrastructure North America, Johnson Controls, is a member of the board of NAESCO and as such promotes the use of performance contracting as a highly cost-effective approach to reducing emissions in the buildings sector.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

World Green Building Council (WorldGBC)

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

The World Green Building Council (WorldGBC) catalyzes the uptake of sustainable buildings for everyone, everywhere. It is focused on three strategic areas, including climate action, health & wellbeing, and resources & circularity and is a global action network comprised of around 70 Green Building Councils globally.

As members of the UN Global Compact, the WorldGBC work with businesses, organizations and governments to drive the ambitions of the Paris Agreement and UN Global Goals for Sustainable Development. Through a systems change approach, the network is leading the industry towards a net zero carbon, healthy, equitable and resilient built environment.

JCI is actively involved with the WorldGBC as a founding member of the Americas Regional Network. JCI is also actively involved with several country level Green Building Councils, including Brazil, Chile, Costa Rica, Colombia, Mexico, and Singapore. Our teams are active locally helping to drive green building and net zero policy agendas. We have JCI team members serving as President of the Chile GBC and Vice President of the Costa Rica GBC. We actively participate in WorldGBC events and initiatives, such as the Leadership Summit and the Building Efficiency Accelerator (BEA) project to promote Net Zero Carbon policies in the Latin America Region.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

Digital Climate Alliance

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

The Digital Climate Alliance (DCA) is a first-of-its-kind coalition of leading global companies with the purpose of informing public policy regarding the role digitalization can play as an enabler of climate solutions. The DCA's policy agenda is focused on building the systemic policy infrastructure needed to ensure the digital age enables the large-scale societal transformations needed to build a climate-safe and equitable world. It advocates that digital solutions can reduce emissions, drive efficiency, measure impact, create demand, achieve transparency, and enhance resiliency.

JCI is a founding member of the Digital Climate Alliance and participates on the Buildings Subcommittee. In that capacity, we help set the agenda for DCA's policy priorities and stakeholder engagement strategy for the buildings sector.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

European Heat Pump Association (EHPA)

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

The European Heat Pump Association represents the majority of the European heat pump industry. Its members comprise of heat pump and component manufacturers, research institutes, universities, testing labs and energy agencies. Its key goal is to promote awareness and proper deployment of heat pump technology in the European market for residential, commercial and industrial applications. Heat pumps are a key enabler in the road to decarbonization and EHPA advocates for adoption of the

technology.

Alexander Pachai, Marketing Communications Manager, Johnson Controls, serves on the National Association Board of EHPA.
Christina von Westernhagen, Director of Government Relations Europe, Johnson Controls, serves on the Advocacy Group of EHPA.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

Trade association

Other, please specify

AmCham EU

Is your organization's position on climate change consistent with theirs?

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

AmCham EU speaks for American companies committed to Europe on trade, investment and competitiveness issues. It aims to ensure a growth- oriented business and investment climate in Europe. Amcham EU supports a low-carbon and competitive economy.

For AmCham EU, Tomas Brannemo, VP and President, Building Solutions, Europe, Middle East, Africa and Latin America, is a member of the AmCham EU Executive Council. Christina von Westernhagen, Director of European Government Relations, is a member of the Transport, Energy and Climate Committee and promotes energy efficiency in their advocacy.

Funding figure your organization provided to this trade association in the reporting year, if applicable (currency as selected in C0.4) (optional)

Describe the aim of your organization's funding

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication

In mainstream reports

Status

Complete

Attach the document

johnson-controls-international-plc-fiscal-2021-annual-report.pdf

Page/Section reference

(page numbers reference pdf) Page 5: Statement from the CEO, "Delivering sustainability";
Page 12: "Fiscal 2021 In Review" including the issuance of our sustainability-linked bond, the launch of our ambitious new ESG goals, and our our first integrated green, social and sustainability-linked finance framework;
Page 14: "Sustainability Leadership" with sustainability highlights from fiscal 2021;
Page 16: "Our Director Nominees"
Page 17: membership of the Governance and Sustainability Committee

Content elements

Governance
Strategy
Emissions figures
Emission targets
Other metrics

Comment

At Johnson Controls, sustainability is at the heart of our business and fundamental to everything we do. Thus, we incorporate sustainability, our organization's response to climate change and GHG emissions performance into our Proxy Statement. In addition to the pages mentioned above, key sections related to ESG are on page 34, 36, 39, 48 - 52 (page numbers reference pdf, not page numbers listed on the document)

Publication
In mainstream reports

Status
Complete

Attach the document
FY2021 Non-Financial Report.pdf

Page/Section reference
Our annual Non-Financial Report is signed by our Chairman and CEO and published with our Annual Meeting Materials. It contains our material environmental, social and governance topics and our approach and progress toward those issues. It is available with our Annual Meeting Materials at: https://investors.johnsoncontrols.com/annual-meeting-materials

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Publication
In voluntary sustainability report

Status
Complete

Attach the document
Johnson_Controls_2022 Sustainability Report_reduced_size.pdf

Page/Section reference
Since 2003, we have reported sustainability data in accordance with the GRI guidelines. This report has been prepared in accordance with the GRI Standards: Comprehensive option. We are also a SASB Reporter, utilizing the SASB Standard for the Resource Transformation Sector – Electrical and Electronic Equipment in this report.

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues
Row 1	No, and we do not plan to have both within the next two years

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity
Row 1	No, and we do not plan to do so within the next 2 years

C15.3

(C15.3) Does your organization assess the impact of its value chain on biodiversity?

	Does your organization assess the impact of its value chain on biodiversity?
Row 1	No, but we plan to assess biodiversity-related impacts within the next two years

C15.4

(C15.4) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?

Row 1	No, and we do not plan to undertake any biodiversity-related actions

C15.5

(C15.5) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No	

C15.6

(C15.6) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located

C16. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

Johnson Controls International PLC Cautionary Statement Regarding Forward-Looking Statements

Johnson Controls International PLC has made statements in this report that are forward-looking and therefore are subject to risks and uncertainties. All statements in this document other than statements of historical fact are, or could be, "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. In this communication, statements regarding Johnson Controls' risks and opportunities related to climate change; the potential financial impacts of climate change on Johnson Controls; climate-related commitments, targets, plans, and objectives; climate-related data, future sustainability goals, targets and performance, future financial position, sales, costs, earnings, cash flows, other measures of results of operations, synergies and integration opportunities, capital expenditures and debt levels are forward looking statements. Words such as "may," "will," "expect," "intend," "estimate," "anticipate," "believe," "should," "forecast," "project" or "plan" and terms of similar meaning are also generally intended to identify forward-looking statements. However, the absence of these words does not mean that a statement is not forward-looking. Johnson Controls cautions that

these statements are subject to numerous important risks, uncertainties, assumptions and other factors, some of which are beyond Johnson Controls' control, that could cause Johnson Controls' actual results to differ materially from those expressed or implied by such forward-looking statements. A detailed discussion of risks related to Johnson Controls' business is included in the section entitled "Risk Factors" in Johnson Controls' Annual Report on Form 10-K for the 2021 fiscal year filed with the SEC on November 15, 2021, which is available at www.sec.gov and www. johnsoncontrols.com under the "Investors" tab. The description of certain of these risks is supplemented in Item 1A of Part II of Johnson Controls subsequently filed Quarterly Reports on Form 10-Q. Shareholders, potential investors and others should consider these factors in evaluating the forward-looking statements and should not place undue reliance on such statements. The forward-looking statements included in this communication are made only as of the date of this document, unless otherwise specified, and, except as required by law, Johnson Controls assumes no obligation, and disclaims any obligation, to update such statements to reflect events or circumstances occurring after the date of this communication.

In addition, Johnson Controls has made several public commitments regarding environmental, social and corporate responsibility matters, including, among others, commitments to achieve net zero Scope 1 and 2 carbon emissions by 2040 and the establishment of science-based targets to reduce carbon emissions from Johnson Controls operations and the operations of its customers. Although Johnson Controls intends to meet these commitments, it may be required to expend significant resources to do so, which could increase operational costs. Further, there can be no assurance of the extent to which any of these commitments will be achieved, or that any future investments Johnson Controls makes in furtherance of achieving such commitments will meet external expectations or any binding or non-binding legal standards regarding environmental social or corporate responsibility performance. Moreover, Johnson Controls may determine that it is in the best interest of Johnson Controls and its stockholders to prioritize other business, social, governance or sustainable investments over the achievement of these commitments based on economic, regulatory and social factors, business strategy or pressure from investors, activist groups or other stakeholders. Johnson Controls ability to achieve its public environmental, social and corporate responsibility commitments may also be negatively impacted by one or more of the risks included in the section entitled "Risk Factors" in Johnson Controls' Annual Report on Form 10-K for the 2021 fiscal year filed with the SEC, as updated by any subsequently filed Quarterly Report on Form 10-Q or Current Report on Form 8-K.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chairman and CEO	Chief Executive Officer (CEO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

The European Climate Pact Submission

Please indicate your consent for CDP to showcase your disclosed environmental actions on the European Climate Pact website as pledges to the Pact.

Yes, we wish to pledge to the European Climate Pact through our CDP disclosure

Please confirm below

I have read and accept the applicable Terms