Welcome to your CDP Climate Change Questionnaire 2020

C0. Introduction

C0.1

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

At Johnson Controls International plc, headquartered in Cork, Ireland, our employee purpose is to power our customers' success and protect the environment. With a global team of approximately 105,000 employees in more than 150 countries, our people create smart and sustainable buildings, efficient energy solutions and integrated infrastructure that work seamlessly together to empower customers and communities to consume less energy and conserve resources. From optimizing building performance to improving safety and enhancing comfort, we drive the outcomes that matter most.

We grow our business by providing sustainable products and services, improving operational effectiveness, empowering our people, and reducing the environmental footprint of our operations and supply chain. We believe our leadership in sustainability ultimately creates long-term benefits for our customers, employees, shareholders and society as a whole. To this end, George Oliver joined other corporate CEOs in signing the Business Roundtable's Statement on the Purpose of a Corporation. This document outlines a modern standard for corporate responsibility and includes a commitment to protect the environment by embracing sustainable practices. We also announced several ambitious commitments at the 2019 United Nations Climate Action Summit in New York, supporting actions to limit climate change and increase global prosperity. For more than 130 years, Johnson Controls has made sustainability an integral part of our business through our vision and values and the products, services and solutions we offer. The hard work and dedication of our employees around the globe enables us to achieve our sustainability goals and deliver on our vision of a safe, comfortable and sustainable world.

Johnson Controls is a global market leader in engineering, developing, manufacturing and installing building products and systems around the world. Our offering includes a wide range of high-quality HVAC equipment and controls, energy management systems, security systems, fire detection systems, and fire suppression solutions. Johnson Controls has a strong presence in the North American residential air conditioning and heating systems markets in addition to being a global leader in industrial refrigeration products. We further serve customers by providing technical services in the HVAC, security and fire protection spaces. We also provide energy management consulting and data-driven solutions through our dedicated Digital Solutions business.

Our sustainable products and services and commitment to operational excellence allows us to help our customers, suppliers and other partners reduce their energy use and greenhouse gas

emissions and overall improve resource efficiency. We are also committed to continuous improvement in our own operations, including reducing our environmental impact.

We are honored to present this report to CDP on our progress.

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, 2018	September 30, 2019	Yes	2 years

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

Argentina
Australia
Austria
Bahrain
Belgium
Brazil
Canada
Chile
China
China, Hong Kong Special Administrative Region
China, Macao Special Administrative Region
Colombia
Costa Rica
Czechia
Denmark
Egypt
Finland
France
Germany
Hungary
India
Indonesia
Ireland
Isle of Man
Israel
Italy
Japan
Kazakhstan
Kuwait

Lebanon
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, Greater 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

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
Chief Executive Officer (CEO)	Sustainability strategy is set by the CEO and Executive Leadership Team. The board is apprised of sustainability and environmental performance quarterly by the CEO or a member of the Executive Leadership Team. We have recently added a Chief Sustainability Officer who reports to the board of directors and CEO on our sustainability progress and goals along with an associated Sustainability Leadership Committee. The CDP report is approved by the CEO as is our GHG reduction target.

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 – some meetings	Reviewing and guiding strategy Monitoring implementation and	Sustainability strategy is set by the CEO and Executive Leadership Team. The board is apprised quarterly of sustainability and environmental performance by the CEO or a member of the Executive Leadership Team. Starting in 2019, the board reviews and signs our non-financial disclosure

	performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	which is published as part of our annual meeting materials. The Non-Financial Report addresses environmental, social and governance issues, including climate. In 2020, the Governance Committee of our board was renamed the Governance and Sustainability Committee and the committee charter amended to underscore the committee's oversight of all dimensions of sustainability, including climate-related issues. In December 2019, Johnson Controls became one of the first industrial companies to tie its senior revolving facilities to individual sustainability metrics in the U.S. syndicated loan market. Our new five-year senior revolving credit facility and our one-year senior revolving credit facility include a sustainability-linked pricing mechanism that adjusts interest rates in line with our sustainability performance. The sustainability metrics are tied to employee safety, the greenhouse gas emissions savings we are able to achieve for our customers, and reduced greenhouse gas emissions from our operations.

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 Executive Officer (CEO)	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).

In general, Johnson Controls' CEO and Executive Leadership Team is responsible for developing our overall mission and strategic plan from an enterprise and business level. Johnson Controls' Board of Directors approves and oversees the implementation of the

company's mission, strategic plan and business strategies and provides oversight and advisory support. The Vision and Values of our Board of Directors include our company vision of a safe, comfortable and sustainable world and our company values: Integrity First; Purpose Led; Customer Driven; Future Focused; and One Team. The Governance Committee of our board was recently renamed the Governance and Sustainability Committee and its charter was amended to add additional responsibilities with respect to the oversight of Johnson Controls' sustainability initiatives, including climate-related issues. Our new Chief Sustainability Officer works with the CEO and reports our progress toward our sustainability and associated climate-related commitments to this committee.

The Board of Directors is briefed at each meeting which often includes economic, environmental and/or social topics. Authority for day-to-day management of economic, environmental, and social topics is delegated to the Executive Leadership Team, which comprises the senior executives responsible for all our major corporate functions, business and operational units. The most senior positions with operational responsibility for Environment and Society aspects include the Executive Vice President and General Counsel; Vice President, Public Affairs and Chief Diversity Officer; Executive Vice President Human Resources; Vice President for Procurement; and Vice President, Chief Ethics and Compliance Officer. In addition, at the local level, local business unit leaders are responsible for the impacts our business has on the environment and local society. The Executive Leadership Team further delegates relevant authority for economic, environmental, and social topics—particularly including all the material aspects discussed in Johnson Control's sustainability reporting—to the internal Global Sustainability Council (GSC) and other appropriate organizations within the company.

The GSC was established in 2009 to provide a structure for our enterprise-wide environmental sustainability strategy and coordination. It plays a central role as a coordinating structure for the enterprise on sustainability issues. The GSC is responsible to the Chief Executive Officer and his direct reports. The Executive Sponsor of the GSC is the Vice President, Public Affairs, Chief Diversity Officer and President, Johnson Controls Foundation. The membership of the GSC is comprised of VP-level executives that represent different business areas, functions and regions, to ensure that our environmental and sustainability initiatives have sufficient senior-level support across the enterprise, globally. The GSC focuses on solutions, people, partnerships, performance and governance and has developed measurable goals for each in order to drive Johnson Controls to be recognized as a global leader in providing scalable, market-based building and energy solutions addressing the world's greatest sustainability challenges.

The GSC is the mechanism by which top enterprise-wide environmental initiatives are tracked. The GSC generates a quarterly sustainability scorecard which contains the progress for all established goals, and shares it with the Executive Leadership Team. The leader of the GSC formally reviews and approves the organization's annual business and sustainability report and the content for the GRI framework, which supports multiple reporting and research entities throughout the year.

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. Our CEO has performance goals tied to our sustainability metrics, and reports on progress toward these goals quarterly to our board of directors. In turn, these sustainability goals are integrated into the goals of our executive team. That team ensures sustainability is integrated into the goals of their teams globally.

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 inventivized	Comment
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.
Other, please specify Operations Leadership	Monetary reward	Emissions reduction target Energy reduction target Efficiency target	We provide monetary and company recognition to the Operations Leadership who 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 plants to identify energy reduction projects and this person's performance measurement includes a metric on this requirement.
All employees	Non-monetary reward	Emissions reduction project	Johnson Controls has several awards programs designed to recognize outstanding performance. Our

		Energy reduction project Efficiency project Behavior change related indicator	Chairman's and Merit Awards are the most prestigious and include recognition for sustainability. This category includes recognition for energy conservation, greenhouse gas (GHG) emissions reductions and related areas. Depending on their specific responsibilities, many employees also have incentive compensation targets based on a wide array of metrics, including reducing energy consumption and GHG emissions.
Other, please specify Suppliers	Non-monetary reward	Environmental criteria included in purchases Supply chain engagement	We annually recognize our suppliers who have outstanding performance in various categories. Selection is based on various criteria for each award. The award provided in the area of sustainability is based on an array of environmental and social criteria, and include scores for reducing energy use and GHG emissions, public reporting, and reporting to CDP.
Chief Executive Officer (CEO)	Non-monetary reward	Emissions reduction target Energy reduction target Efficiency target	Sustainability is embedded into our products, services, culture and the performance goals of employees at every level of our organization, starting at the top. Our CEO has performance goals tied to our sustainability metrics, and reports on progress toward these goals quarterly to our board of directors. In turn, these sustainability goals are integrated into the goals of our executive team. That team ensures sustainability is integrated into the goals of their teams globally.
Environment/Sustainability manager	Non-monetary reward	Company performance against a climate-related sustainability index	We recognize the importance of transparency and so report in accordance with the U.N. Global Compact, European Union Non-Financial Disclosure, Global Reporting Index (GRI), CDP, Task Force on Climate-Related Financial Disclosure (TCFD), and SASB, among others. Our Global

			Sustainability team ensures that we are transparent.

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	5	
Long-term	5	10	

C2.1b

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

We define a substantive impact when identifying or assessing climate-related risks as a $500 million impact on revenues or a $150 million impact on our results of operations.

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

Annually

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 2019 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. The results of the ERM process are presented to the Board annually and a Risk Committee escalates any new risks to the Executive Committee. 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 Sustainability Leadership Committee.

In addition to our integrated Enterprise Risk Management Process, our company has also implemented a climate-related risk and opportunity management process. We held a climate-related risks and opportunities strategy workshop 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.

First, we conducted a scenario analysis aligned to a 1.5 degree world, a 2 degree world and a 4 degree world based on IPCC RCP scenarios for physical risk and IEA scenarios for transition risks related to the building sector, contrasting the differences in these scenarios and the potential impact on our business. 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. The results of this work is detailed in sections C2.3a and C2.4a of the CDP response.

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	- 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	- 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	- 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	- 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	– Changing customer behavior – Uncertainty in market signals – Increased cost of raw materials (supply chain risk)
Reputation	Relevant, always included	– Shifts in consumer preferences – Increased stakeholder concern or negative stakeholder feedback
Acute physical	Relevant, always included	– Increased severity and frequency of extreme weather events such as cyclones or floods at our facilities – 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, sometimes included	– 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

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 we develop new product platforms, Johnson Controls is 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 will help capture the opportunities presented by customer demands for reduced operating expenses and lower GHG emissions. However, there is no guarantee that regulations will be introduced exactly as anticipated in terms of stringency, scale, and schedule. Likewise, there is no guarantee that national and subnational governments will take the policy actions necessary to meet ambitious GHG emissions reduction targets. Taken together, emerging regulation poses potential risks of increased capital investment and operating costs to improve our product offering, and/or revenue loss due to a having a sub-optimal product portfolio for a given regulatory framework. However, since these regulatory requirements tend to align with consumer demand for improving performance, operational efficiency, and environmental sustainability, Johnson Controls expects that our continued investment focused on improved environmental performance through product redesign and platform development will manage these regulatory risks over the short and long term, and in some cases turn them into opportunities for future growth.

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)

0

Potential financial impact figure – maximum (currency)

2,000,000,000

Explanation of financial impact figure

The maximum figure is representative of JCI revenue attributable to HVAC products which meet current minimum global regulations for energy efficiency and GHG emissions-related performance, and therefore must be improved in order to meet

anticipated regulatory requirements in the short to medium term, and assumes we do not make the necessary product improvements. The minimum financial impact is zero, which assumes we make necessary product updates as currently planned to comply with expected regulations.

Cost of response to risk

50,000,000

Description of response and explanation of cost calculation

Johnson Controls responds to this risk through both innovation and continuous improvements to our product portfolio to meet and exceed anticipated regulatory standard levels. Improving the environmental performance of our products tends to reduce their operating cost and is consistent with our customer's demands, and so regulatory expectations are incorporated into our product development approach as a baseline performance level. Ideally, the timing of these regulatory changes would align with the redevelopment cycle for a given product platform, and so we advocate for regulatory certainty and harmonized, regularly scheduled updates. The figure provided is a conservative estimate to update our current product platforms to meet anticipated energy efficiency and refrigerant GWP regulations

Comment

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Technology

Substitution of existing products and services with lower emissions options

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

We expect a continued market shift toward low-to-zero emissions solutions driven by both "push" factors (e.g. mandatory regulation, financial incentives) and "pull" factors (e.g. market-based emissions policies, evolving customer behavior). 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.

However, this shift also presents an enormous opportunity for Johnson Controls, utilizing our building automation and HVAC product offerings. With our digital solutions,

we can measure, control, automate and optimize energy consumption, distributed generation and storage to provide demand flexibility while meeting dynamic building occupant and utility grid needs. With our product portfolio, we can offer customers what we believe to be best-in-class energy efficiency, low-GWP refrigerants, and heating solutions with zero direct emissions, all delivered as an integrated building system. Johnson Controls addresses this risk through innovation in product development focused on best-in-class energy performance and operational GHG emissions improvements, in alignment with anticipated regulatory and consumer trends, and in bringing the costs of these products down. We are a global leader in the use of ultra-low GWP natural refrigerants (e.g., ammonia, carbon dioxide, hydrocarbons) which can substitute for HFO and other fluorine-based refrigerants in some HVAC and refrigeration applications.

Time horizon

Medium-term

Likelihood

About as likely as not

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)

0

Potential financial impact figure – maximum (currency)

6,600,000,000

Explanation of financial impact figure

This figure is representative of Johnson Controls' revenue attributable to HVAC equipment which exceeds mandatory minimum regulatory requirements, or which are not subject to these regulations but could potentially be substituted over time with a competing, lower emission technology. Use of this figure is grounded in the assumption that, over time, consumer preferences will evolve to demand low-to-zero emission (both direct and indirect) building technologies. If we were to simply ignore this trend and do nothing to address the operational GHG emissions of these products, the revenue they generate will be at risk.

Cost of response to risk

75,000,000

Description of response and explanation of cost calculation

Responding to this risk requires ongoing investment in product development aimed at reducing an end-user's emissions below a "business as usual" baseline. The figure provided represents a rough estimate of development costs associated with a major Johnson Controls product platform redesign. This figure is larger than the costs associated with Risk #1 as new requirements are more likely to impact product functionality, and thus be more demanding.

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Upstream

Risk type & Primary climate-related risk driver

Market

Increased cost of raw materials

Primary potential financial impact

Decreased revenues due to reduced production capacity

Company-specific description

This is risk associated with potential increases in costs of the materials we use to operate our company, manufacture our products and deliver our solutions. These increases could come from a variety of climate-related risks, whether they be physical risks or policy changes that increase the cost of supplies, for example, increased cost for decarbonizing process heating, supply costs impacted by increasing energy costs, or energy costs impacted by carbon prices or offsets. Other forms of potential supply chain risks are extreme weather events (storms, floods, droughts, etc.) impacting suppliers in a way that jeopardize our ability to get supplies.

Beyond business continuity, there are also social risks from a supply chain sustainability perspective. As climate change impacts supply chains, there are potential risks if suppliers are not able to appropriately respond to climate-related social impacts (e.g., a supplier utilizing water in water scarce areas in a way that impacts the communities in which they work and live).

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-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)

25,000,000

Potential financial impact figure – maximum (currency)

450,000,000

Explanation of financial impact figure

Disruptions in the supply chain could pose risks ranging widely in financial implication, however risks of substantial likelihood and size are considered to have a potential impact of $350 million, or 1.5% of our revenues.

Lastly, the High-Level Commission on Carbon Prices, a group of leading economists working with the Carbon Pricing Leadership Coalition, concluded that the explicit carbon-price level consistent with achieving the Paris temperature target is at least USD $40–80/tCO2 by 2020 and USD $50–100/tCO2 by 2030. If a $25/tCO2—$100/tCO2 tax on energy costs was implemented, this would have an annual impact of up to $100 million, assuming a portion of cost from purchased goods and services and capital goods would be passed on.

Cost of response to risk

1,000,000

Description of response and explanation of cost calculation

Managing supplier risk is part of our risk management and business continuity planning processes. We work to understand where our suppliers' plants are located and the likelihood of a natural disaster. If risk does exist for a supplier, there are efforts to secure duplication of supply. We are driven to understand the balance of supply versus where the demand is going to and ensuring our supply base is aligned and having duplicative capacity where necessary across the globe. We are actively expanding our business continuity efforts, risk assessment, and monitoring tools to consider climate risks with incremental costs estimated to be $1 million.

Additionally, we already conduct supplier surveys to understand their proactive engagement on sustainability within their operations to help ensure we are sourcing from suppliers whose sustainability strategies and actions are consistent with ours and are thus better positioned to respond to climate challenges and related social impacts. The company has administered a supplier questionnaire called the Johnson Controls Sustainability Supplier Rating to assess our suppliers' sustainability programs and performance. The online survey is administered to key suppliers annually. It was first released in January 2010 and is available on the Johnson Controls website. The survey contains questions related to human rights, working conditions, employee safety, energy management, carbon footprint, waste management, local and diversity sourcing, and

overall environmental impact. 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. The Johnson Controls Sustainability Rating is part of our supplier scorecard.

We require all our suppliers to adhere to our Code of Ethics, which covers issues such as labor, human rights, and the environment. We have policies and procedures in our business for removing unethical suppliers from our approved vendor lists if they don't or won't comply with our Code of Ethics.

Comment

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Reputation

Other, please specify

Costs associated with meeting public sustainability commitments

Primary potential financial impact

Increased indirect (operating) costs

Company-specific description

Johnson Controls has always been a company that drives energy efficiency, both internally and for our customers. In 2019, we reaffirmed our global commitment to reducing our environmental footprint through energy efficiency and utilizing highly efficient cooling. Here are some of the commitments and public statements we have made that demonstrate our vision for a safer, more sustainable world.

Voluntary corporate commitments and date adopted:

U.N. Global Compact 2004

Climate Leaders Program 2007

Copenhagen Communique 2009

Better Buildings Challenge 2013

Responsible Corporate Engagement in Climate Policy 2015

Reduce short-lived climate pollutant emissions 2015

American Business Act on Climate Pledge 2015

Energy Productivity - EP100 2017

“We Are Still In” pledge 2017

Commitment to adopt Science-Based Targets 2018

Three Percent Club 2019

High-Level Commission on Carbon Pricing 2019

Cool Coalition 2019

For purposes of this risk, we’ll focus on our EP100 commitment to double our energy productivity by 2030 from a 2009 baseline and our commitment to set a science-based target in 2020.

EP100 commitment to double our energy productivity:
Johnson Controls has been tracking and publicly reporting our energy use and greenhouse gas (GHG) emissions since 2002. Johnson Controls achieved two significant sustainability milestones in 2019 by reducing greenhouse gas intensity by 65 percent while doubling the energy productivity of our operations over a 16-year period. We joined EP100 to extend the sustainability commitments and accomplishments we have made since 2002 and to demonstrate leadership in our industry. Our EP100 commitment is to double our energy productivity by 2030 from a 2009 baseline.

Science-based target commitment:
Johnson Controls has committed to adopting a science-based target to reduce greenhouse gas emissions. Our commitment is in line with what the latest climate science says is necessary to meet the goals of the Paris Agreement – to limit global warming to well-below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium

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)

0

Potential financial impact figure – maximum (currency)

200,000,000

Explanation of financial impact figure

If we don't live up to our commitments, it could result in reputational damage and thus decreased demand for our products and a lower enterprise valuation. We aligned our methodology for potential impact for this risk to that used by other companies, and it is reflective of a 1% decrease, rounded to the nearest hundred million, in annual company revenue, using FY2019 revenue.

Cost of response to risk

27,000,000

Description of response and explanation of cost calculation

It could cost up to $27 million by 2030 to meet our EP100 and science-based target commitments.

Achieving our EP100 commitment to double energy productivity by 2030 from a 2009 baseline requires operating and capital investments in energy efficiency retrofits and energy management technology. Based on the remaining energy reductions required by 2030 to meet the commitment and a two year payback, a $20 million investment may be required.

In order to achieve our science-based target commitment, we expect that 80% of our energy will need to come from renewable sources and a significant percent of our vehicle fleet will need to be electric or hybrid electric.

We continuously seek cost-competitive lower-carbon purchased electricity and other energy sources. In 2019, we offset 100 percent of our greenhouse gas emissions from electricity use for our manufacturing plants in the United States. We also have on-site renewable energy in some of our locations. In addition, we have retained a renewable energy advisor to help us procure power purchase agreements to meet our global renewable energy targets.

Working with our renewable energy advisor, we ran different financial scenarios for renewable energy. We could save hundreds of thousands each year or, assuming a low case projected cash flows, it could cost $7 million by 2030 to achieve an eighty percent renewable energy procurement target.

We have a specific vehicle emissions reduction workgroup to analyze emissions data and ensure we achieve annual emissions 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. In particular, we have a strategy in Europe to convert our passenger vehicles to electric vehicle use. We also optimize our logistics and our packaging in order to decrease weight and increase load factors and have implemented several fuel consumption and greenhouse gas reduction strategies. Our strategies include the use of higher miles per gallon vans and trucks, advanced telematics, and implementing a policy which prohibits speeding and encourages fuel-efficient driving techniques. We also collaborate with our suppliers to decrease environmental impact from transportation by participating in the U.S. Environmental Protection Agency's SmartWay program and encouraging our leased truckers to participate.

Comment

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical

Increased severity and frequency of extreme weather events such as cyclones and floods

Primary potential financial impact

Increased insurance claims liability

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 crisis management for 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.

Time horizon

Short-term

Likelihood

More likely than not

Magnitude of impact

Medium-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)

0

Potential financial impact figure – maximum (currency)

65,000,000

Explanation of financial impact figure

If we had to build a new manufacturing plant because one was destroyed by an acute physical impact, it could cost up to $65 million to the company. All company facilities are insured for physical costs and business interruption losses, so this represents the unmitigated risk.

Cost of response to risk

0

Description of response and explanation of cost calculation

Johnson Controls already has staff and processes in place to respond to physical risks. At this time, the potential exposure associated with physical changes is currently assessed and managed through risk assessments. Johnson Controls is 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. All Johnson Controls' facilities go through a third-party facility risk management audit every two to three years. Those facilities found to be at high risk are required to implement "highly protected risk" procedures. These procedures include additional staff training and equipment to maximize safety and minimize damage. Our up-front risk engineering investment can reduce the adverse impact from loss, including enhancing employee safety and retaining market share. In addition, for new construction, Johnson Controls evaluates multiple sites against risks such as environmental contamination, proximity risks and natural catastrophe (earthquake, flood, wind storm) exposure and seeks to develop policies, plans and procedures where risks are optimally managed. Business Continuity Planning and Crisis Management programs are also key pillars in our risk mitigation program. Although the full repercussions of climate-change in particular locations remain to be fully identified, Johnson Controls remains committed to updating site assessments to allow for adequate risk mitigation planning. Additionally, our facilities go through a facility risk audit every two to three years to ensure they can properly respond to risks.

For sites that are at risk, for example if they are a sole source facility, we have specific processes to mitigate risk. We have business continuity plans for each site that outline site-specific potential courses of actions to ensure business continuity for our customers. Actions include things like expanding dual capability where necessary across the Johnson Controls' network or creating extra inventory.

Additionally, we are sponsoring a University of Illinois at Urbana-Champaign student project in the Fall of 2020 to identify various climate-related chronic impacts of our locations and those of major suppliers, including locations that may be at increased risk for flooding.

Comment

Identifier

Risk 6

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Chronic physical

Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact

Increased capital expenditures

Company-specific description

In the scenario analyses we conducted, we examined both the acute and chronic physical risks to our global locations. We recognize that global temperatures are increasing, extreme droughts are becoming more frequent, hurricanes and cyclones are becoming more frequent and more severe, and river and coastal flooding is increasing. Climate change is expected to lead to increased drought in dry areas and the expansion of dry areas.

Johnson Controls has 16 manufacturing facilities that are located in regions that have high or extremely high risk of water scarcity with most in Mexico, the United States, China, and India.

We are sponsoring a detailed study in the Fall of 2020, with the help of a University of Illinois at Urbana-Champaign student project team, to determine various chronic physical climate impacts at our manufacturing and major supplier locations around the world.

Time horizon

Long-term

Likelihood

Likely

Magnitude of impact

Medium-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)

0

Potential financial impact figure – maximum (currency)

1,000,000

Explanation of financial impact figure

The $1 million figure is based on estimation of potential premiums for water at water-stressed sites. Johnson Controls reduces and mitigates the effects of risks from extreme weather events at the individual plant level, through site selection, constructing eligible facilities to the Highly Protected Risk (HPR) standard, environment, health and safety protocols and business continuity planning.

At the plant level, regular risk assessments are performed, including natural catastrophe perils. These assessments are also performed at business-critical supplier locations. We investigate and implement mitigation actions to our physical risks, including water storage, water delivery, air conditioning, backup power. In addition, to prevent supply disruptions in case of weather extremes we maintain dual sourcing strategies where possible.

In our business continuity planning, we investigate a variety of risks to our business, including the impact of chronic physical risks to our locations. We are looking into integrating chronic physical risks into site selection, and possibly mergers & acquisition decision matrices.

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. The property insurance program insures our physical assets on a Replacement Cost New basis.

To help address the water risk, our goal is to reduce water consumption by 10 percent at our water-stressed facilities by 2025. We conducted a detailed analysis with the World Resources Institute AquaductTM tool to identify which of our locations are in

water-stressed areas. We measure consumption in both our manufacturing and office buildings, detect and repair water leaks, recalibrate flow meters, and deploy water-saving technologies.

Cost of response to risk

250,000

Description of response and explanation of cost calculation

This figure represents potential costs to install tanks at a water-stressed site for water-storage. Just like acute physical risks, Johnson Controls analyzes the likelihood of long-term climate impacts in plant locations. Our facilities managers and risk management staff identify our high-risk areas for chronic climate impact. In addition, this year they are getting support from a team of university students who are working with Johnson Controls to help us identify our locations with the greatest potential physical risk and the types of risk from climate changes.

Typically, our facilities are in industrial corridors or complexes where other industrial activities are present, and our impacts on sources of water are not significant. Internally, we implemented best practices and water savings efforts at water-stressed locations, and in 2019 achieved a 5.9 percent annual reduction in water use. To address water risk, we have water reclamation technologies at several of our facilities, including all three of our corporate headquarters buildings - in Glendale, Wisconsin, USA; Cork, Ireland; and Shanghai, China. At our Glendale facility we have a 30,000-gallon rooftop cistern to capture rainwater for reuse in water closets and urinals.

Comment

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?

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 continually looks for ways to improve the efficiency of our global portfolio of facilities. Over the years, we have made investments in high-performance green buildings and we currently have 15 facilities that are USGBC LEED certified. This includes all three of our corporate headquarters buildings located in Glendale, Wisconsin, Cork, Ireland and Shanghai, China.

Our Glendale Headquarters campus achieved four USGBC LEED Platinum certifications when we expanded the campus with construction of two new buildings and the renovation of two existing buildings in 2010. While overall campus space doubled from the expansion, campus energy use declined by over 20%.

In 2016, our Cork, Ireland headquarters, One Albert Quay, was certified Gold under LEED. Features that are incorporated in the facility include rainwater harvesting and treatment technologies, highly efficient solar-reflective external glazing, and solar PV.

In 2017, our Asia-Pacific headquarters in Shanghai, China, became the first triple-certified building in China achieving not only USGBC LEED Platinum certification, but also IFC-World Bank Group's EDGE (Excellence in Design for Greater Efficiencies) Certification and the China Green Building Design Label Three Star Certification. The facility is also achieved an EDGE net zero ready designation.

The move towards making our facilities more efficient holds true for not only new construction, but also for retrofits of existing facilities. Moving forward, Johnson Controls will continue to invest in technologies that improve the efficiency and sustainability of our overall building portfolio.

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

(Annual impact)

Johnson Controls continually looks for ways to make our building portfolio more efficient. When doing upgrades to existing facilities, we use more efficient technologies that result in annual energy savings. For new facilities, we build high-performing, green buildings that also save a significant amount of energy and water over a standard building. To estimate the financial impact of this opportunity, we assumed a range of savings in percentage terms from our annual utility spend.

Cost to realize opportunity

12,000,000

Strategy to realize opportunity and explanation of cost calculation

(Annual impact)

In order to realize savings from more efficient technologies, we need to pay a premium over standard facility upgrades. In addition, we pay slightly more in up-front costs for new buildings that we recoup in savings over the lifecycle of the building. In order to estimate the cost associated with increased up-front costs, we looked at recent new construction projects, as well as our annual facility-related capital expenditures. We then estimated the premium that was paid for higher levels of efficiency and included that as a cost.

Comment

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Reduced indirect (operating) costs

Company-specific description

Johnson Controls has a long history of pursuing sustainability improvements and pursuing green power options. Since 2010, we have been a partner of the EPA Green Power Partnership, looking to expand renewable electricity use in our operations. As of FY2019, we cover 100% of our US manufacturing electricity usage with renewable energy certificates (RECs) which represent over 75% of our electricity use in the US. As the use of lower-emission sources of energy continues to grow for corporate buyers, we have an opportunity to demonstrate additional leadership by expanding our renewable electricity strategy beyond RECs to include Power Purchase Agreements (PPAs)—and we are actively pursuing this. Through the use of a comprehensive PPA-based strategy, we are setting ourselves on a path to meeting our 2025 target and a future science-based target.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

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)

0

Potential financial impact figure – maximum (currency)

850,000

Explanation of financial impact figure

(Annual impact)

In addition to helping Johnson Controls meet its sustainability commitments, a renewable energy procurement strategy also has the possibility of generating positive cash flows. The potential financial impact is a base estimate of the annual cash flow of 12-15 year term PPAs in the United States and Europe to cover roughly 50% of Johnson Controls' global electricity usage. In addition, we will be expanding the use of energy attribute certificates (EACs) for additional regions until corporate procurement options mature in other regions. Through the use of PPAs and EACs, we aim to cover 80% of electricity usage to help enable progress towards our 2025 sustainability target and a future science-based target.

Cost to realize opportunity

200,000

Strategy to realize opportunity and explanation of cost calculation

Johnson Controls has a staff working group that is actively engaged with an external energy advisor to implement this opportunity. It is part of the team's regular roles and responsibilities and does not require additional costs to pursue the opportunity. There are projected annual costs of approximately $200,000 associated with expanding energy attribute certificates to cover countries that don't have feasible Power Purchase Agreements.

Comment

Identifier

Opp3

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

Just as regulations which seek to reduce GHG emissions present significant risks for our HVAC solutions that meet the minimum performance requirements of today, they create tremendous growth opportunities for our solutions that we believe provide best-in-class environmental performance, as well as the new solutions that will form tomorrow's product portfolio. As noted in Risk #1, these regulatory changes are generally aligned with customer demands and are pushing the market toward more energy efficient equipment, low-global warming potential (GWP) refrigerants, and non-combustion sources of heating, all attributes which are incorporated into Johnson Controls' product and platform development process.

In addition to regulations directly impacting our product performance, policy trends to require improved energy efficiency and lower GHG emissions at the building-level create significant upside for JCI revenue. Traditionally these policies have focused on new buildings, such as in energy codes, and we expect that regulatory pathways toward smart, net-zero energy new buildings will favor our high efficiency equipment and connected controls. However, there is perhaps even more potential in requirements for existing buildings, such as in mandatory building performance standards in major U.S.

cities, and policies supporting an energy efficiency “renovation wave” in Europe targeting 3% of the existing building stock per year. Over 70% of respondents to Johnson Controls 2019 energy Efficiency Indicator (EEI) study rated building energy codes and product performance standards as being “extremely” or “very important” in improving energy efficiency in buildings. Not only will these policies create additional pull-through for products with best-in-class environmental performance, they play to Johnson Controls' strength as a provider of comprehensive integrated building solutions including building management systems supported by advanced digital tools and applications.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-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)

0

Potential financial impact figure – maximum (currency)

2,500,000,000

Explanation of financial impact figure

This figure is representative of 50% of Johnson Controls' revenue attributable to green HVAC and controls-related equipment and services. Based on our expectation for policy adoption through 2030, we view a 50% increase of revenue from green products and energy services as a conservative financial impact figure. For the purposes of this analysis, we assume the total potential revenue impact is split evenly between Opportunity #3: regulatory policies leading to low emissions good and services (i.e. market “push”), and Opportunity #5: changes in consumer preferences (i.e. market “pull”).

Cost to realize opportunity

0

Strategy to realize opportunity and explanation of cost calculation

The costs of responding to anticipated regulations and the substitution of existing products with lower emissions options are addressed in our responses to Risk #1 and Risk #2. We do not anticipate substantial additive product development expenses will be

necessary to leverage Opportunity #3 since our product and platform development activities are already focused on energy efficiency and sustainable design.

Comment

Identifier

Opp4

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of climate adaptation, resilience and insurance risk solutions

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

As customers look to make their facilities more resilient in the face of increasing instances of natural disasters, they are looking for solutions that can help them ensure their facilities are able to stay operational. These solutions include distributed generation, energy storage, micro grids, and digital solutions like central plant optimization and building to grid integration. In addition, customers are looking for flexible facilities that can quickly adapt to different emergency situations.

Findings from Johnson Controls annual Energy Efficiency Indicator Survey point to increased focus on resiliency by facility executives. Our 2019 survey indicated that over 80% of organizations said resilience is extremely or very important when considering future energy and building infrastructure investments. In addition, almost 60% of global organizations indicated they are extremely or very likely to have one or more facilities that will able to operate off the grid in the next ten years. This points to the increased interest in solutions that facilitate the ability to operate off the grid when conditions require it. Strong investment in technologies that support building resilience is also expected. According to the 2019 survey, 39% of global respondents plan to invest in onsite renewable energy over the next 12 months, 33% plan to invest in non-renewable distributed energy generation, 52% plan to invest in electric energy storage, and 31% plan to invest in integration between building systems and distributed energy resources.

Johnson Controls is also seeing increased interest in projects that support resiliency from our customers. We partnered with the University of Hawaii to provide solar PV coupled with battery distributed energy storage, so that the UH Maui College campus is capable of generating 100% of its energy on-site. Johnson Controls also partnered with the U.S. Army to design, implement, and operate an island wide Solar PV/Lithium-ion

Battery Storage/Microgrid control system to U.S. Army Garrison Kwajalein, a missile test site in the Republic of the Marshall Islands.

To further the solutions we can offer to customers to make facilities more resilient, Johnson Controls has a joint venture with Con Edison to provide battery energy storage solutions and controls systems.

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium-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)

80,000,000

Potential financial impact figure – maximum (currency)

180,000,000

Explanation of financial impact figure

(annual impact)

Johnson Controls currently provides solutions to our customers that increase the resiliency of their buildings and campuses including distributed energy resources, energy storage, and micro grids. We expect strong growth in these markets over the next several years and that as they grow, Johnson Controls will capture a portion of it. We estimated a range for the financial impact based on these market growth rate predictions and the products and services we offer that will benefit from it.

Cost to realize opportunity

1,000,000

Strategy to realize opportunity and explanation of cost calculation

(annual)

In order to realize the opportunity, we will need to continue to add resources that can help us evaluate customer resiliency needs and develop solutions that can meet them. We will also continue to invest resources in partnerships that help us build out the solutions that we can offer to customers.

Comment

Identifier

Opp5

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

Similar to the policies that will push the market to expand lower-emission goods and services (Opportunity #3), we view shifting customer demands as creating even more significant market pull toward these solutions, especially as a growing number of enterprises set goals for reducing emissions. In addition to increasing demand for Johnson Controls products covered by these policies, we see increased demand for our products and services which are difficult to regulate, such as industrial refrigeration, performance infrastructure, and active, dynamic approaches to efficiency in building systems. This shift in consumer preferences is a significant opportunity for Johnson Controls. The Johnson Controls 2019 Energy Efficiency Indicator (EEI) study found that 75% of surveyed organizations in the U.S. plan to increase their investment in energy efficiency, renewable energy and smart building technology, a 16% increase over 2018. The research suggests that sustainability is a key contributor to this increase – 80% of organizations with energy or greenhouse gas reduction goals plan to increase investment next year, versus 37% without goals.

These market trends are already shifting customer expectations; 55% of respondents to JCI's 2019 EEI study indicated that is "extremely" or "very likely" that their organization will have one or more facilities that are nearly zero, net zero, or positive energy/carbon status in the next ten years. Johnson Controls is proving that it can meet this demand today, including projects such as Powerhouse Brattørkaia, an energy positive commercial building in Trondheim, Norway, and the Bee'ah Headquarters in Sharjah, UAE, a LEED Platinum net-zero building which will store all building systems in a digital vault for advanced analytics and machine learning. As near-zero buildings become the status quo, Johnson Controls' product and service offerings are well-positioned to deliver competitive solutions across the spectrum of building applications.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium-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)

168,000,000

Potential financial impact figure – maximum (currency)

4,500,000,000

Explanation of financial impact figure

This figure is representative of the remaining 50% of Johnson Controls' revenue attributable to green HVAC and controls-related equipment and services (split between Opportunity #3 and Opportunity #5), plus expected new revenue opportunities from non-regulated green products and services. At a minimum, we expect a global doubling of the heat pump market, as suggested by IEA data, to create new revenue opportunities for JCI heat pump industrial refrigeration product offerings.

Cost to realize opportunity

50,000,000

Strategy to realize opportunity and explanation of cost calculation

Like Opportunity #3, the changes to our HVAC and controls-related portfolio required to respond to Risks #1 and #2 are the same as those which will take advantage of shifts in customer demand toward low-emissions products and solutions, and no additional incremental costs are required. However, Johnson Controls anticipates that additional capital investments will be required to address non-HVAC and controls solutions, at an estimated average cost of $50 million per initiative or product platform.

For example, Johnson Controls is partnering the Singapore Economic Development Board to set up a $50 million lab, set to open in September 2020, to drive artificial intelligence-based innovations for the built-environment industry. Such innovations will improve energy usage, increase the commercial attractiveness of properties, and enhance its environmental, social and governance metrics.

Comment

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization's strategy and/or financial planning?

Yes

C3.1a

(C3.1a) Does your organization use climate-related scenario analysis to inform its strategy?

Yes, qualitative and quantitative

C3.1b

(C3.1b) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenarios and models applied	Details
IEA Sustainable development scenario	
2DS	
Other, please specify Carbon Brief, The impacts of climate change at 1.5C, 2C and beyond; 2019 Energy Efficiency Indicator Survey	In addition to Johnson Controls' integrated Enterprise Risk Management Process, our company has also implemented a climate-related risk and opportunity management process. Climate-related risks and opportunities strategy planning included active involvement of company senior leadership from sustainability, legal, finance, strategy, operations, enterprise property, supplier sustainability, regulatory affairs, ethics and compliance, procurement and environment, health and safety. As part of this strategy work, we conducted a scenario analysis aligned to a 1.5 degree world, a 2 degree world and a 4 degree world based on IPCC RCP scenarios for physical risk and IEA scenarios for transition risks related to the building sector, contrasting the differences in these scenarios and the potential impact on our business. 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. Specific scenarios we utilized in our analysis: IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental

	Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, 151 pp. IEA (2019), World Energy Model, Sustainable Development Scenario, IEA, Paris https://www.iea.org/reports/world-energy-model Carbon Brief, The impacts of climate change at 1.5C, 2C and beyond: https://interactive.carbonbrief.org/impacts-climate-change-one-point-five-degrees-two-degrees/ Johnson Controls' own Energy Efficiency Indicator study, tracking current and planned investments, key drivers, and organizational barriers to improving energy efficiency in facilities. Since the first survey was released in 2007, over 27,000 energy and facility management leaders have been surveyed. 2019 marked the 13th edition of the survey with 1,300 respondents represented from twelve countries, including the United States, India, China, Japan, Indonesia, Brazil, Mexico, Germany, the United Kingdom, Ireland, France, and the United Arab Emirates: 2019 Energy Efficiency Indicator Survey: https://www.johnsoncontrols.com/insights/2020/featured-story/2019-energy-efficiency-indicator

C3.1d

(C3.1d) 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	At Johnson Controls, sustainability is distributed, integrated, and embedded across the businesses and across functions. Our sustainability strategy is approved by the Executive Committee and governed by the Global Sustainability Council (GSC). We established our 2025 Sustainability Strategy in 2018 based on our new company footprint, sustainability materiality assessment, and corporate strategic plan. Our 2025 Sustainability Strategy takes a holistic approach to sustainability through five pillars of focus including, "Provide increasingly sustainable products and services."

		Our progress by the end of FY2019 includes: Since January 2000, performance contracting projects have helped our customers save more than 29.4 Million Metric Tons CO2e and $6.3 billion through energy and operational savings. Our products and services were honored with sustainability awards including the Sustainability Product of the Year for the YORK® Mission Critical Direct Evaporative Cooling Air Handling Unit by The Business Intelligence Group along with our project partners, and the Digie Award for “Most Intelligent Building – Corporate Headquarters” for Bee’ah’s new sustainable headquarters in the United Arab Emirates. Our commitment to sustainability extends to the solutions we bring to our customers. Johnson Controls has implemented more than 3,000 energy-saving projects globally. Our award-winning YZ Chiller is the most efficient lowGWP large-tonnage chiller on the market today. We also recently launched a new high-efficiency rooftop air conditioner that offers new sustainability features such as UV-light air treatment and energy recovery. Our progress is being noticed. We are honored to be called one the World’s Most Ethical Companies for the thirteenth time, to earn MSCI’s AAA status, to be on the list of the 100 Best Corporate Citizens by CR Magazine, and to be named to Corporate Knights’ Carbon Clean 200 list of companies leading the way with solutions for a clean energy future.
Supply chain and/or value chain	Yes	Our 2025 Sustainability Strategy takes a holistic approach to sustainability through five pillars of focus including our goal to "Increase diverse supplier spend at a rate exceeding revenue growth." We require all our suppliers to adhere to our Code of Ethics, which covers issues such as labor, human rights, and the environment. We have policies and procedures in our business for removing unethical suppliers from our approved vendor lists if they don’t or won’t comply with our Code of Ethics. The company employs a proprietary supplier questionnaire called the Johnson Controls Sustainability Supplier Rating to assess our suppliers’ sustainability programs. The online

		survey is administered to key suppliers annually. The survey contains questions related to human rights, working conditions, employee safety, energy management, carbon footprint, waste management, local and diversity sourcing, and overall environmental impact. 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.
Investment in R&D	Yes	Our 2025 Sustainability Strategy takes a holistic approach to sustainability through five pillars of focus including our goal to, "Lead in global partnerships that significantly increase our sustainability impact." We support global research by our partners including the World Resources Institute, Sustainable Energy For All, and the World Green Building Council. In addition, we continually conduct R&D on energy efficient products and services we can provide to power our customers' success and protect the environment and recently announced a $50 million R&D center in Singapore to drive innovation and sustainability.
Operations	Yes	Our 2025 Sustainability Strategy takes a holistic approach to sustainability through five pillars of focus including our commitment to improve our operational performance. These ambitious operational goals drive us to ambitious 2025 goals related to greenhouse gas emissions, energy, water, waste, safety and diversity from a 2017 baseline. In 2019, we achieved two significant sustainability milestones by reducing our enterprise-wide greenhouse gas intensity by half while doubling the energy productivity of our operations over a period of 16 years. In addition, our renewable energy amounted to 251,908 MWh through the purchase of Renewable Energy Certificates. Through this initiative we offset 100% of our greenhouse gas emissions from our Global Products manufacturing plants in the United States. We exceeded our FY2019 2.5% reduction goal for greenhouse gas intensity by achieving 5.1%, and also reduced our energy intensity by 1.8%.

		We are on track to meet our Zero Landfill goals and, in FY2019, reached 19 Zero Landfill facilities.

C3.1e

(C3.1e) 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	Revenues Capital expenditures Capital allocation Acquisitions and divestments Access to capital	In December 2019, Johnson Controls became one of the first industrial companies to tie its senior revolving facilities to individual sustainability metrics in the U.S. syndicated loan market. We entered into two of the first sustainable improvement loans in the U.S. and the industrial sector with the execution of our new $2.5 billion Five-Year Senior Revolving Credit Facility and our $500 million 364-day senior Revolving Credit Facility. These facilities include a sustainability-linked pricing mechanism that adjusts interest rates in line with our sustainability performance. The sustainability metrics are tied to employee safety, the greenhouse gas emissions savings we achieve for our customers, and reduced greenhouse gas emissions from our operations.

C3.1f

(C3.1f) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

In 2019, Johnson Controls' chairman and CEO George Oliver joined CEOs around the world in signing the Business Roundtable's Statement on the Purpose of a Corporation, which includes a commitment to protect the environment by embracing sustainable practices across our business. We also signed a sustainable finance agreement, tying sustainability metrics to our finance rates. We also announced several ambitious commitments at the 2019 United Nations Climate Action Summit in New York to work to help limit climate change and increase global prosperity.

C4. Targets and performance

C4.1

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

Intensity 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) (or Scope 3 category)
Scope 1+2 (market-based)

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

Base year
2017

Intensity figure in base year (metric tons CO2e per unit of activity)
49.8

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure
100

Target year
2025

Targeted reduction from base year (%)
25

Intensity figure in target year (metric tons CO2e per unit of activity) [auto-calculated]
37.35

% change anticipated in absolute Scope 1+2 emissions
-11

% change anticipated in absolute Scope 3 emissions
0

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

39.9

% of target achieved [auto-calculated]

79.5180722892

Target status in reporting year

Underway

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Please explain (including target coverage)

In 2018, we announced our new Sustainability Goals for 2025 related to greenhouse gas emissions, energy, water, waste, safety and diversity from a 2017 baseline. These goals continue our commitment to address our environmental and social impacts and address topics most material to Johnson Controls and our stakeholders. This strategy drives sustainability across our entire value chain by focusing on five areas: solutions, people, partnerships, performance and governance. As part of this new strategy, we are committing to new, ambitious 2025 performance targets related to greenhouse gas emissions, energy, water, waste, safety and diversity from a 2017 baseline:

- 25% reduction for energy and greenhouse gas intensity
- 10% reduction for water use at water-stressed locations
- 25% of manufacturing locations to be landfill-free
- 25% reduction in recordable safety incidents
- Increase diverse supplier spend at a rate exceeding revenue growth

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 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.

C4.2

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

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
398

Target year
2025

Figure or percentage in target year
0.75

Figure or percentage in reporting year
381

% of target achieved [auto-calculated]
4.2794210195

Target status in reporting year
Underway

Is this target part of an emissions target?

In 2018, we announced our new 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 have committed to reduce 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 (including target coverage)

In addition to supporting our greenhouse gas intensity target, our energy intensity target also supports our target for EP100 and the U.S. DOE Better Plants Challenge. Our goal of a 25% reduction in energy intensity helps to serve as an interim target along the way to meeting our EP100 goal of doubling energy productivity by 2030 and 25% reduction in energy intensity from 2019 to 2029.

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	0
To be implemented*	0	0
Implementation commenced*	12	674
Implemented*	53	19,432
Not to be implemented	0	0

C4.3b

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

Initiative category & Initiative type

Energy efficiency in buildings

Other, please specify
HVAC & Lighting

Estimated annual CO2e savings (metric tonnes CO2e)
592

Scope(s)
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
366,824

Investment required (unit currency – as specified in C0.4)
366,824

Payback period
<1 year

Estimated lifetime of the initiative
3-5 years

Comment
Our plants hold Energy Hunt Program audits and implement projects that bring energy savings on an ongoing basis.

Initiative category & Initiative type
Energy efficiency in production processes
Other, please specify
Process improvement and compressed air

Estimated annual CO2e savings (metric tonnes CO2e)
320

Scope(s)
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
160,680

Investment required (unit currency – as specified in C0.4)
241,019

Payback period

1-3 years

Estimated lifetime of the initiative

3-5 years

Comment

Our plants hold Energy Hunt Program audits and implement projects that bring energy savings on an ongoing basis.

Initiative category & Initiative type

Company policy or behavioral change

Other, please specify

Energy awareness programs

Estimated annual CO2e savings (metric tonnes CO2e)

728

Scope(s)

Scope 2 (market-based)

Voluntary/Mandatory

Voluntary

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

275,680

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

275,680

Payback period

<1 year

Estimated lifetime of the initiative

3-5 years

Comment

Our plants hold Energy Hunt Program audits and implement projects that bring energy savings on an ongoing basis.

Initiative category & Initiative type

Low-carbon energy consumption

Other, please specify

Renewable Energy Certificates (RECs)

Estimated annual CO2e savings (metric tonnes CO2e)
17,792

Scope(s)
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

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

Investment required (unit currency – as specified in C0.4)
24,718

Payback period
No payback

Estimated lifetime of the initiative

Comment
This amount of reduced GHGs is associated with the Renewable Energy Certificates (RECs) that were added during FY2019.

C4.3c

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

Method	Comment
Dedicated budget for energy efficiency	We have created teams that bring areas of continuous improvement, environmental health and safety, finance, among others together at manufacturing sites to support the development of a roadmap with the sustainability projects that the plant will plan to implement. Projects may impact several sustainability metrics including: energy, greenhouse gases, water, and waste; and will require no cost or low cost. Each of the plants will devote a portion of their operating budget to implementing these projects throughout the fiscal year.
Employee engagement	Our company values include Sustainability as a key element in our internal activities and in the way we do business with customers and suppliers. The company has a global employee portal where global news and campaigns are promoted, including updates on our sustainability activities. We have also created teams that bring areas of continuous improvement, environmental health and safety, finance, among others together at manufacturing sites to support the development of a roadmap with the sustainability projects that the plant will consider to implement, including our Energy Champions and

	Energy Teams that are part of implementing the Energy Hunt program that is a part of our Environment & Sustainability Principle of our Johnson Controls Manufacturing System. Our Continuous Improvement and Best Business Practice teams have created an Energy Awareness education module for employees at our plants to help them learn about the best practices we can apply on our day to day activities and keep our energy use very efficient, and these and similar materials have been shared with multiple internal stakeholders. We also have an employee sustainability resource group, with chapters in all regions of the world. Throughout the world, we foster community involvement by our employees through our Blue Sky Involve employee volunteer program, demonstrating our social conscience to improve the communities in which we live, work and operate. Blue Sky Involve helps Johnson Controls employees share their passion and expertise through community volunteer activities and strengthens their professional and leadership skills. The program reinforces our corporate values and brings them to life through service to the community. Employees form volunteer groups and work with local nonprofit organizations or schools to support education, environmental stewardship or social service effort. Each partner organization receives a grant of $250, $500, $1000, or $2,500, depending on project type, towards a volunteer project planned with our employees. Since Blue Sky Involve launched in 2006, Johnson Controls employees have coordinated more than 10,000 projects and volunteered 1.7 million hours of their time to local communities. In 2019, 95 percent of our Blue Sky Involve volunteer efforts aligned with U.N. Sustainable Development Goals.
Financial optimization calculations	We have created teams that bring areas of continuous improvement, environmental health and safety, finance, among others together at manufacturing sites to support the development of a roadmap with the sustainability projects that the plant will plan to implement. Projects will impact a range of sustainability metrics including: energy, greenhouse gases, water, and waste; and will require no cost or low cost. Each of the plants will devote a portion of their operating budget on implementing these throughout the fiscal year. The continuous improvement culture started with a focus on optimizing and saving costs, and we maintain our focus on identifying projects that will bring both a cost reduction and an environmental sustainability benefit.

Lower return on investment (ROI) specification	We are committed to making our office and manufacturing facilities energy-efficient and ensuring they conserve water and minimize waste. Our policy is that all energy efficiency projects with less than a three payback get funded with available capital budget. This is a lower criteria than most capital investments.
Compliance with regulatory requirements/standards	We continue to monitor regulatory change and recognize many positive aspects of climate change legislation for our businesses. We believe that significant action is needed in the short-term to mitigate the causes and begin adapting to the negative risks and actual impacts of climate change. We believe the highest priority actions should be improving energy efficiency in buildings which represent the fastest, cleanest and most cost-effective way to reduce greenhouse gas emissions. We actively support market-based approaches to carbon emissions that assure the integrity of the reductions and are efficient in their implementation. We support the inclusion of energy efficiency in regulations aimed to address climate change, because we believe energy efficiency will accelerate emission reductions and reduce the overall cost of compliance to businesses and consumers. These policies include updated building codes, building performance labeling, financial incentives for energy efficiency retrofits and a national energy efficiency resource standard. We support the Kigali Amendment to the Montreal Protocol and the transition to low GWP refrigerants. Overall, we feel strongly that timely adoption of comprehensive energy and climate legislation will reduce economic and regulatory uncertainty and allow companies to better manage both risks and opportunities related to climate change. These uncertainties include emission reduction requirements, energy price volatility, energy-intensive materials pricing, carbon offset monetization opportunities and the impact of building efficiency codes, standards and incentives. Uncertainties related to the impact of climate change would also be reduced including the future cost of adaptation, availability of resources and the potential for climate-related business disruption.
Internal incentives/recognition programs	An important part of the way we engage our employees and foster a culture of excellence is by rewarding outstanding work. Merit Awards, and the company's highest honor, the Chairman's Award, are given when our employees demonstrate excellence in their performance. Also, our plant managers and several members of our senior operational leadership have monetary incentive goals that may include specific energy, waste, and GHG emission targets for their area of responsibility. JCMS Plant Manager Champion Program – The JCMS Plant Manager Champion is a program that recognizes Plant Managers as the key differentiators for all employees to improve plant performance via plant

	management “championing” the One Johnson Controls Way of manufacturing. In this program, Plant Managers will be able to recognize JCMS as the One Johnson Controls Way of Manufacturing and maintaining people accountable; they will establish an improving mindsets and behaviors that are reflected in every process, launch and product in the plant in a sustainable way.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Group of products

Description of product/Group of products

At Johnson Controls, sustainability is our business. In fiscal 2018, green revenue represented 45 percent of our total revenue, and in fiscal 2019 it represented 49 percent of our total revenue. We follow the Corporate Knights Clean Revenue taxonomy standard for calculating green revenue. Different green revenue percentages were applied to different product categories, as appropriate based on environmental impacts. Percentages of revenue from the following were included: residential and commercial HVAC equipment, variable refrigerant flow heat pump offerings, building automation and controls, and industrial refrigeration. The following were included in total revenue and not in green revenue: fire detection and suppression, security, retail, and other products and services.

One example is our revolutionary YORK® YZ magnetic-bearing centrifugal chiller is the most efficient chiller in the world. The YZ chiller is fully optimized for ultimate performance with a next generation low GWP refrigerant, delivering superior real-world performance, lower cost of ownership and a new definition of sustainability. YZ chillers offer 35 percent better efficiency than conventional centrifugal chillers. This system also offers up to 60 percent lower refrigerant charge than traditional systems available in the market.

Another example is our new series of 27.5 – 50 ton commercial rooftop units. Select rooftop units from Johnson Controls feature a pre-packaged Smart Equipment controls platform with a full array of user-adaptable parameters, and the units integrate seamlessly with the Verasys building controls system for maximum system control.

Select rooftop units are offered alongside the award-winning Johnson Controls Premier platform to provide a complete and competitive offering in this tonnage range. Select rooftop units exceed aggressive Department of Energy (DOE) 2023 energy efficiency standards by up to 22% while surpassing current DOE 2018 levels by up to 39%. In addition, the units offer up to 31% greater part-load efficiency (IEER) than competitive models and up to 15% greater IEER than the Millennium™ legacy product. Coming later in 2020, the four-stage IntelliSpeed models will bring even higher efficiencies, with energy costs reduced to industry-leading levels.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product and avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

GHG Protocol

% revenue from low carbon product(s) in the reporting year

49

Comment

As examples:
During reporting year 2019 our active performance contracting projects helped our customers save 1.5 million metric tons CO2e. Since January 2000, our efforts to help our customers save energy through performance contracting have resulted in a reduction of more than 29.4 million metric tons CO2e. In just the last two years, since 2017, our customers have saved more than 241,000 metric tons of CO2e from new Performance Infrastructure projects. These GHG reductions are computed from the guaranteed energy savings data from each of our performance contracting projects. Depending on the type of energy being saved we apply EPA emission factors to compute the GHG value associated with the guaranteed savings. This provides an annual savings which is added to the savings calculated from previous years to derive the 29.4 million metric tons CO2e savings from FY2000 – FY2019.

Two of our chiller product lines produced during reporting year 2019 help our customers save 76,000 metric tons CO2e annually compared to existing standard industry designs. These products help save greenhouse gas (GHG) emissions by being more energy efficient and having a smaller refrigerant charge.

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start
October 1, 2016

Base year end
September 30, 2017

Base year emissions (metric tons CO2e)
733,256

Comment
Our goal during 2019 was to reduce our emissions intensity by 25% by 2025 over a 2017 baseline.

Scope 2 (location-based)

Base year start
October 1, 2016

Base year end
September 30, 2017

Base year emissions (metric tons CO2e)
420,320

Comment
Our goal during 2019 was to reduce our emissions intensity by 25% by 2025 over a 2017 baseline

Scope 2 (market-based)

Base year start
October 1, 2016

Base year end
September 30, 2017

Base year emissions (metric tons CO2e)
404,242

Comment
Our goal during 2019 was to reduce our emissions intensity by 25% by 2025 over a 2017 baseline.

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Defra Voluntary 2017 Reporting Guidelines
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)

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)
686,713

Start date
October 1, 2018

End date
September 30, 2019

Comment

Past year 1

Gross global Scope 1 emissions (metric tons CO2e)
672,253

Start date
October 1, 2017

End date
September 30, 2018

Comment

Past year 2

Gross global Scope 1 emissions (metric tons CO2e)
733,256

Start date
October 1, 2016

End date
September 30, 2017

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
395,376

Scope 2, market-based (if applicable)
269,191

Start date
October 1, 2018

End date
September 30, 2019

Comment

Past year 1

Scope 2, location-based
418,983

Scope 2, market-based (if applicable)
310,990

Start date
October 1, 2017

End date
September 30, 2018

Comment

Past year 2

Scope 2, location-based
420,320

Scope 2, market-based (if applicable)
404,242

Start date
October 1, 2016

End date
September 30, 2017

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

Metric tonnes CO2e
4,704,000

Emissions calculation methodology

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.

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

0

Please explain

Capital goods

Evaluation status

Relevant, calculated

Metric tonnes CO2e

2,899,000

Emissions calculation methodology

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.

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

0

Please explain

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

Evaluation status

Relevant, calculated

Metric tonnes CO2e

33,000

Emissions calculation methodology

Greenhouse Gas Protocol's Corporate Value Chain (Scope 3) Accounting and Reporting Standard and Technical Guidance for Calculating Scope 3 Emissions - 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. This source cites this information coming from the International Energy Agency (IEA), Energy Statistics and Balances for Non-OECD and OECD Countries. This table provides an average percentage of electricity lost in the transmission and distribution based on the output (in this case amount that we used) per country by year. 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. Then from this primary plus secondary natural gas emissions value, we subtracted emissions from only usage, which then yields a delta representing the GHGs associated with the T&D losses for natural gas. We applied this Energy Star factor to global natural gas usage, assuming the average applied to the rest of the countries.

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

0

Please explain

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

566,000

Emissions calculation methodology

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. The % fuel spend used for 2019 was 32% and it was extracted from an industry document released by the Energy Management Institute's subscription called "Freight Surcharge Index: The U.S. Freight Rate Benchmark for Trucking Companies, Shippers, & Owner Operators". This document was provided by our logistics team as they stated that this information is defined for the industry to provide transparency. Although this represents the US logistics industry, at this point our best approach is to use this assumption for the rest of the world as well until we find similar organizations for other regions that provide this level of transparency on charges. This percentage is then applied to the total spend value to compute dollars attributed to fuel usage only. Then using average fuel cost rates from the Energy Information Administration (EIA) and from the European Union's energy portal, dollars are converted into volume (gallons) of fuel used. EIA rates are applied to all regions except for Europe, where those from the European Union's Energy portal are applied. After obtaining volume of fuel, emission factors for gasoline/petrol and diesel are applied in order to obtain a GHG value.

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

0

Please explain

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

5,000

Emissions calculation methodology

Using the mass of waste hauled during FY2019 by disposition method we compute process emissions from the waste generated in our operations. The emission factors and methodology is 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).

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

0

Please explain

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

43,000

Emissions calculation methodology

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 and Department of Energy & Climate Change (DECC) 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.

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

0

Please explain

Employee commuting

Evaluation status

Relevant, calculated

Metric tonnes CO2e

248,000

Emissions calculation methodology

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. These emissions were then extrapolated to the rest of the global employees

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

0

Please explain

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

Metric tonnes CO2e

15,308,000

Emissions calculation methodology

This value represents the lifetime use phase emissions from the total chiller products that Johnson Controls manufactured during our reporting year period. Our chiller products represent one of the largest “use phase” emission sources. Our Chiller Products team within our Buildings business developed a lifecycle assessment methodology that helps compute the environmental impact, primarily GHG and energy, for each of the phases in the products lifetime. The team considered the expected

average performance specifications by product line, information of the region where they end up operating, and total production to estimate the emissions from their usage phase. The team did this 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.

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

0

Please explain

End of life treatment of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

257,000

Emissions calculation methodology

This value represents the refrigerant losses that occur at the end of the life of a chiller product. This value considers the end of life emissions for all chiller 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. Then considered the total number of units manufactured during reporting year to estimate total emissions for all of chiller products. In a similar fashion to our usage phase emissions, we did this 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.

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

0

Please explain

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

Johnson Controls is not the landlord or leases any location to another entity.

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

Johnson Controls does not own any Franchises.

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 evaluated

Please explain

Other (downstream)

Evaluation status

Not evaluated

Please explain

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	

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	Products/services meeting certain criteria (please specify) Chillers	Use stage	Other, please specify Total Equivalent Warming Impact (TEWI)	The YORK chiller selection software (YORKworks) uses the TEWI calculation in our Annual Emissions Calculator. We encourage owners, engineers, facility maintenance, etc. to ask for these calculations from all manufacturers to highlight the importance of chiller efficiency and refrigerant management. TEWI provides a single value with which to compare the total lifetime emissions of HVAC/R products. This is an industry recognized term/equation and should be applicable to all HVAC/R equipment utilizing refrigerant gas. TEWI accounts for the direct effect of refrigerant released during the lifetime of the equipment (leakage, maintenance, end-of-life recovery) and the indirect impact of CO2 emissions from fossil fuels used to generate the energy needed to operate equipment

				throughout its lifetime.

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	4,224	Biomass emissions from 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

0.00003988

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

955,904

Metric denominator

unit total revenue

Metric denominator: Unit total

23,968,000,000

Scope 2 figure used

Market-based

% change from previous year

5.1

Direction of change

Decreased

Reason for change

Emissions in 2019 decreased, mainly due to the implementation of energy savings projects through our Energy Hunt program and our green power procurement.

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	389,625	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	63	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	127	IPCC Fourth Assessment Report (AR4 - 100 year)
HFCs	296,898	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	463,768
China	59,556
Canada	56,135
United Kingdom of Great Britain and Northern Ireland	32,659
Mexico	11,868
Germany	9,712

Turkey	7,655
Taiwan, Greater China	7,063
France	5,909
Japan	3,923
Other, please specify Rest of world. Countries where our total Scope 1 emissions are under 3,000 metric tons CO2e are included in the "Rest of world" category.	28,466

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 Technologies and Solutions	680,155
Corporate	6,558

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)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
United States of America	170,945	37,235	328,762	251,909
China	74,206	74,206	117,781	0
Japan	39,043	39,043	71,520	0
Mexico	31,307	31,307	67,210	0
Taiwan, Greater China	25,451	25,451	43,159	0
Malaysia	12,667	12,667	19,266	0
India	12,055	12,055	16,500	0
Germany	3,973	6,408	8,848	0
United Kingdom of Great Britain and Northern Ireland	3,288	4,445	12,865	0

Denmark	1,250	3,030	6,019	0
Other, please specify Rest of world. Countries where our total Scope 2 emissions are under 3,000 metric tons CO2e are included in the "Rest of world" category.	21,192	23,344	64,477	0

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 Technologies and Solutions	381,074	263,777
Corporate	14,302	5,414

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	17,792	Decreased	1.8	This decrease of 1.8% represents the benefit of increasing the procurement of green power through REC purchases. These emissions represent the reduction from the additional amount of

				RECs purchased during FY19 compared to our purchases in FY18.
Other emissions reduction activities	1,640	Decreased	0.2	This decrease represents the benefit of implementing the Energy Hunt program, which 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.
Divestment	0	No change	0	Johnson Controls sold its Power Solutions business in 2019. In order to allow for accurate comparisons of data over time, we have rebaselined our data back to FY17.
Acquisitions	0	No change	0	Johnson Controls sold its Power Solutions business in 2019. In order to allow for accurate comparisons of data over time, we have rebaselined our data back to FY17.
Mergers	0	No change	0	Johnson Controls sold its Power Solutions business in 2019. In order to allow for accurate comparisons of data over time, we have rebaselined our data back to FY17.
Change in output	23,876	Increased	2.4	This change represents the assumed increase in emissions due to an increase in output. It is estimated based on the difference of FY18 emissions and the assumed emissions of FY19 using FY19 revenue and the FY18 emission intensity to estimate how much our emissions should have increased, assuming all other things were held constant.
Change in methodology	118	Increased	0.01	There was a slight change in emissions due to new residual values used in the market-based Scope 2 accounting.
Change in boundary	0	No change	0	

Change in physical operating conditions	0	No change	0	
Unidentified	0	No change	0	
Other	31,902	Decreased	3.2	This accounts for the remain emissions reductions necessary to account for the difference between FY18 and FY19. These additional reductions would be associated with reductions in energy use not attributable to project-specific reductions from our Energy Hunts described above in 'Other emissions reduction activities'.

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?

Decreased

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

Decreased

Primary reason for change

Other, please specify

Change in materials and services purchased

Change in emissions in this category (metric tons CO2e)

437,000

% change in emissions in this category

9

Please explain

Primary reason for change in the materials and services purchased from FY18 to FY19.

Capital goods

Direction of change

No change

Please explain

There was no meaningful change from FY18 to FY19 (0% change).

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

Direction of change

Decreased

Primary reason for change

Other emissions reduction activities

Change in emissions in this category (metric tons CO2e)

2,000

% change in emissions in this category

6

Please explain

Primary reason for change is a reduction in energy use.

Upstream transportation and distribution

Direction of change

Increased

Primary reason for change

Change in output

Change in emissions in this category (metric tons CO2e)

70,000

% change in emissions in this category

14

Please explain

Primary reason of increase from FY18 to FY19 was an increase in amount of shipping taking place from FY18 to FY19.

Waste generated in operations

Direction of change

Decreased

Primary reason for change

Other, please specify
reduction in waste produced

Change in emissions in this category (metric tons CO2e)
1,000

% change in emissions in this category
17

Please explain
Reduction in waste emissions is due to a decrease in waste produced from FY18 to FY19.

Business travel

Direction of change
Decreased

Primary reason for change
Other, please specify
Reduction in business travel

Change in emissions in this category (metric tons CO2e)
5,000

% change in emissions in this category
10

Please explain
Primary reason for reduction was a reduction in expensed miles traveled.

Employee commuting

Direction of change
Increased

Primary reason for change
Other, please specify
Increase in employees and miles traveled

Change in emissions in this category (metric tons CO2e)
4,000

% change in emissions in this category
2

Please explain
Primary reason for increase is a slight increase in number of employees and estimated miles traveled.

Use of sold products

Direction of change
Decreased

Primary reason for change
Change in output

Change in emissions in this category (metric tons CO2e)
442,000

% change in emissions in this category
3

Please explain
Primary reason for change is due to changes in volume of different chillers sold from FY18 to FY19.

End-of-life treatment of sold products

Direction of change
Decreased

Primary reason for change
Change in output

Change in emissions in this category (metric tons CO2e)
11,000

% change in emissions in this category
4

Please explain
Primary reason for change is due to changes in volume of different chillers sold from FY18 to FY19.

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	No

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)	13,198.6	1,763,117.6	1,776,316.3
Consumption of purchased or acquired electricity		252,502.2	503,907.6	756,409.8
Consumption of purchased or acquired steam		0	4,255.1	4,255.1
Total energy consumption		265,700.8	2,271,280.3	2,536,981.1

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	No

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.

Fuels (excluding feedstocks)
Natural Gas

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
505,514

Emission factor
53.1148

Unit
kg CO2e per million Btu

Emissions factor source
EPA. Emission Factors for Greenhouse Gas Inventories. March 2018.

Comment

Fuels (excluding feedstocks)
Butane

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
20,099

Emission factor
6.697

Unit

kg CO2e per gallon

Emissions factor source

EPA. Emission Factors for Greenhouse Gas Inventories. March 2018. Butane.

Comment

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

1,035,488

Emission factor

8.78

Unit

kg CO2 per gallon

Emissions factor source

EPA. Emission Factors for Greenhouse Gas Inventories. March 2018. Motor Gasoline mobile combustion

Comment

Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

1,477

Emission factor

10.217

Unit

kg CO2e per gallon

Emissions factor source

EPA. Emission Factors for Greenhouse Gas Inventories. March 2018. Distillate Fuel Oil No. 1.

Comment

Fuels (excluding feedstocks)
Propane Gas

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
26,589

Emission factor
5.723

Unit
kg CO2e per gallon

Emissions factor source
EPA. Emission Factors for Greenhouse Gas Inventories. March 2018. Average value between Propane and LPG.

Comment

Fuels (excluding feedstocks)
Other, please specify
Heavy fuel oil

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
14,403

Emission factor
11.303

Unit
kg CO2e per gallon

Emissions factor source
EPA. Emission Factors for Greenhouse Gas Inventories. March 2018. Residual fuel oil No. 6.

Comment

Fuels (excluding feedstocks)
Wood Pellets

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
13,199

Emission factor
0.324

Unit
kg CO2e per KWh

Emissions factor source
EPA. Emission Factors for Greenhouse Gas Inventories. March 2018. Wood and wood residuals.

Comment

Fuels (excluding feedstocks)
Jet Gasoline

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
10,438

Emission factor
9.8394

Unit
kg CO2e per gallon

Emissions factor source
EPA Emission Factors for Greenhouse Gas Initiatives, March 2018

Comment

Fuels (excluding feedstocks)
Diesel

Heating value
HHV (higher heating value)

Total fuel MWh consumed by the organization
149,110

Emission factor
10.21

Unit
kg CO2 per gallon

Emissions factor source
EPA Emission Factors for Greenhouse Gas Initiatives, March 2018. Diesel Fuel mobile combustion

Comment

C8.2e

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

Sourcing method
Unbundled energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type
Biomass

Country/region of consumption of low-carbon electricity, heat, steam or cooling
United States of America

MWh consumed accounted for at a zero emission factor
250,528

Comment

Sourcing method
Unbundled energy attribute certificates, Renewable Energy Certificates (RECs)

Low-carbon technology type
Wind

Country/region of consumption of low-carbon electricity, heat, steam or cooling

United States of America

MWh consumed accounted for at a zero emission factor

1,381

Comment

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

Other, please specify

Products that meet minimum energy performance standards or include performance labeling

Product or service (optional)

Products that meet minimum energy performance standards or include performance labeling

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

Efficiency figure in the reporting year

Metric numerator

Metric denominator

Comment

Products include:

Residential air conditioners and heat pumps;

Packaged air conditioning units;
Chillers;
Commercial heat pumps;

C9. Additional metrics

C9.1

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

Description
Energy usage

Metric value
381

Metric numerator
9,133,135 Gigajoules (GJ)

Metric denominator (intensity metric only)
$23,968 Million USD

% change from previous year
1.8

Direction of change
Decreased

Please explain

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	Expenditures for research activities relating to product development and improvement are charged against income as incurred and included within selling, general and administrative expenses for continuing operations in the consolidated statements of income. Total research and development

		expenditures for the years ended September 30, 2019, 2018 and 2017 were $319 million, $310 million and $307 million, respectively. In addition, in 2020 we announced a $50 million lab in Singapore to drive innovation and sustainability.

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

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

61 - 80%

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

310,000,000

Comment

Expenditures for research activities relating to product development and improvement are charged against income as incurred and included within selling, general and administrative expenses for continuing operations in the consolidated statements of income. Total research and development expenditures for the years ended September 30, 2019, 2018 and 2017 were $319 million, $310 million and $307 million, respectively. A significant portion of our portfolio investments are related to energy efficiency and related R&D expenditures, areas of focus for us going forward. Specifically, Johnson Controls' R&D is in the service of development of energy efficient heating and cooling systems, other energy efficiency products or efficiency drivers and smart systems.

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 2019 Verification Statement.pdf

Page/ section reference
All

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 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 2019 Verification Statement.pdf

Page/ section reference

All

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

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 2019 Verification Statement.pdf

Page/ section reference

All

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 (upstream & downstream)

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 2019 Verification Statement.pdf

Page/section reference
All

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
C8. Energy	Energy consumption	ISO14064-3	Energy usage data is audited as part of the process of verifying emissions. 1

[1]GHG JCI FY 2019 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
Other carbon tax, please specify
CRC Energy Efficiency Scheme

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
.09

% of Scope 2 emissions covered by the ETS
0

Period start date
January 01, 2019

Period end date
December 31, 2019

Allowances allocated
593

Allowances purchased
18

Verified Scope 1 emissions in metric tons CO2e
611

Verified Scope 2 emissions in metric tons CO2e
0

Details of ownership
Our aviation company participates in the EU ETS program for our aircraft.

Comment

C11.1c

(C11.1c) Complete the following table for each of the tax systems you are regulated by.

Other carbon tax, please specify

Period start date

January 4, 2018

Period end date

March 31, 2019

% of total Scope 1 emissions covered by tax

0.6

Total cost of tax paid

100,000

Comment

76,000 English pounds.
Emissions: 4,145 tons of CO2.
During fiscal 2019, Johnson Controls was subject to the UK's Carbon Reduction Commitment Energy Efficiency Scheme (CRC) based on its activities in the UK. Johnson Controls had to report and order sufficient carbon allowances for mandatory reporting purposes to cover CO2 emissions from our activities in the UK which represent less than half a percent from our global Scope 1 and 2 emissions. The CRC is defined as a mandatory reporting scheme and does not operate as a trading scheme. For Johnson Controls the CRC represents the only scheme we had to purchase carbon allowances for during 2018/2019

C11.1d

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

Johnson Controls is committed to improving environmental performance across our own global operations, including manufacturing plants, distribution centers, service centers, offices, fleets and other operations worldwide. 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. Our sustainability strategy focuses on solutions, people, partnerships, performance and governance in order to drive Johnson Controls to be recognized as a global leader in providing scalable, market-based building and energy solutions addressing the world’s greatest sustainability challenges. We have measurable goals to drive each of the following:

* Solutions – improve the sustainability of our high-impact products and services.
* People – foster a culture of sustainability that engages and attracts people who want to make a difference.
* Partnerships – lead in global partnerships that significantly increase the scale of our sustainability impact.
* Performance – performance measures identified to track progress towards our sustainability vision and goals.
* Governance – formalize a sustainability governance process and update strategy to maintain leadership.

Through our Performance workstream we will continue to implement initiatives that will help us becomes more energy-efficient and reduce our GHG emissions. For example the implementation of our Energy Hunt Program in all manufacturing facilities, which continuously helps them identify no-cost and low-cost energy savings measures in such categories as heating, ventilating, air conditioning, compressed air, lighting, energy awareness, and other energy-using equipment and practices. 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.

Additionally, through our Governance workstream, we have set a goal of evaluating an internal price on carbon within the next year.

2020: Our CEO signed onto a WEF agreement on carbon pricing.

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?

No, but we anticipate doing so in the next two years

C12. Engagement

C12.1

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

Yes, our suppliers
Yes, our customers
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

Other, please specify

Annual supplier sustainability survey

% of suppliers by number

20

% total procurement spend (direct and indirect)

80

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

80

Rationale for the coverage of your engagement

The company employs a proprietary supplier questionnaire called the Johnson Controls Sustainability Supplier Rating to quantitatively measure our suppliers' sustainability programs. It was first released in January of 2010 and is available on the Johnson Controls website. The online survey is administered annually to key suppliers that represent the biggest portion of our spend. The survey contains questions related to human rights, working conditions, employee safety, energy management, greenhouse gas (GHG) emissions, waste management, local and diversity sourcing, and overall environmental impact. 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. The Johnson Controls' Sustainability Rating is part of our overall supplier scorecard.

Impact of engagement, including measures of success

When we first determine to put a vendor on an approved vendor list or first establish a contract with a supplier, we establish expectations and negotiate terms and conditions. As part of this work, we assess the supplier's ability to meet our expectations and terms and conditions. For organizations that seek to be long term suppliers to Johnson Controls, we expect them to complete a number of questionnaires and forms, including our Supplier Sustainability Rating Survey, which covers multiple environmental and social topics and serves as a basis for certain awards that we grant to high performing suppliers. We evaluate their performance in a number of ways which include: regular business reviews, scorecards, quality audits, and other mechanisms. As part of our evaluation, we consider compliance with our Code of Ethics as well as applicable laws and regulations governing such topics as labor, human rights, and other environmental and social topics.

Comment

C12.1b

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

Type of engagement

Collaboration & innovation

Details of engagement

Other, please specify

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

% of customers by number

5

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

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

Percent of customers is a low estimate. Collaboration and innovation with our customers to achieve their sustainability goals is a key part our business success. Just two examples:

https://www.johnsoncontrols.com/media-center/news/press-releases/2019/04/23/middle-east-sustainability-pioneer-bee-ah-selects-johnson-controls-microsoft-for-office-of-future
Middle East's sustainability pioneer, Bee'ah, selected Johnson Controls and Microsoft for its Office of the Future:
In partnership with Microsoft, Johnson Controls is showcasing how the cloud and AI can tap into data from physical spaces to drive better engagement with occupants and achieve new levels of efficiency and sustainability. Bee'ah Headquarters in Sharjah, United Arab Emirates, has the goal of being the smartest and most sustainable building in the Middle East. The 7,450m2 building will be 100 percent powered by 3.23 GWh of on-site solar photovoltaic. It is designed to LEED Platinum standards and includes many active and passive energy efficiency measures such as dynamic window controls, daylight controls, insulated glazing, and high-efficiency HVAC systems. Data from all building systems are stored in Johnson Controls' Digital Vault to enable advanced data analytics and machine learning to continuously reduce environmental impact and improve occupant productivity.

https://www.environmentalleader.com/2019-product-project-awards-johnson-controls-and-university-of-hawaii/
University of Hawaii - First 100% Renewable Energy College Campus in the US
Johnson Controls formed a partnership with the University of Hawaii to create the first 100% renewable college campus in the United States. This project is the second phase of a broader multi-year energy efficiency and renewable energy project. It includes additional energy efficiency upgrades and the installation of onsite solar PV coupled with battery storage, allowing the five campuses to use the renewable generated energy.

Johnson Controls built and installed an array of onsite solar panels in the form of shade canopies and rooftop installations, and connected them to batteries. These installations

can store enough energy to power all of Maui College's campus. On Oahu, the combination of canopies, distributed energy storage, and energy efficiency measures should reduce four community colleges' use of fossil fuel for energy by anywhere from 70% to 98%.

Impact of engagement, including measures of success

Since January 2000, performance contracting projects have helped our customers save more than 29.4 Million Metric Tons CO2e and $6.3 billion through energy and operational savings.

C12.1d

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

Johnson Controls has always been a company that drives energy efficiency -- internally, for our customers, and with other partners in the value chain. In 2019, we reaffirmed our global commitment to reducing our environmental footprint through building efficiency and utilizing highly efficient cooling. Here are some of the new commitments and public statements we made in 2019 that demonstrate our engagement with corporations, non-governmental organizations, governments and others in a shared vision for a safer, more sustainable world.

Purpose of a Corporation In August 2019, George Oliver joined other CEOs from around the world in signing the Business Roundtable's Statement on the Purpose of a Corporation. This statement included commitments to deliver value to our customers, invest in our employees, deal fairly and ethically with our suppliers, support the communities where we work, embrace sustainable practices across our business, and generate long-term value for shareholders.

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.

Cool Coalition The Cool Coalition comprises more than 80 partners from the public and private sectors, finance, and academia in addition to international organizations and various global cities. It aims to accelerate the shift to sustainable energy sources for cooling, protect vulnerable populations, and achieve sustainable development through efficient cooling. "Getting cooling right offers a three-in-one opportunity to cut global warming, improve the lives of

millions of people, and realize huge financial savings," said Inger Andersen, executive director, U.N. Environment Program. Her comments were made during the Climate Action Summit in September 2019. "The Cool Coalition is a powerful new collective force for realizing these and many other benefits," Andersen added.

United Nations Global Compact Network USA. Grady Crosby, Chief Diversity Officer and Vice President, Public Affairs, is secretary of the board and chairman of the nomination and governance committee of the United Nations Global Compact Network USA.

Climate Change Task Force. In 2019, Katie McGinty, Vice President, Global Government Relations, was appointed to Wisconsin Governor Tony Evers' climate change task force.

Alliance to Save Energy. In 2019, Clay Nesler, Vice President, Global Sustainability and Regulatory Affairs, and the Global Sustainability Council's chairman, served as interim president and an executive on loan to the Alliance to Save Energy, a nonprofit, bipartisan alliance of business, government, environmental, and consumer leaders working to expand the economy while using less energy.

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

Direct engagement with policy makers
Trade associations
Funding research organizations

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Energy efficiency	Support	In the US, we are engaged in direct lobbying, as well as policy engagement with our allied industry groups and NGOs. At the U.S. Congressional level, we supported the advancement of the American Energy Innovation Act, which has yet to be passed by Congress. That legislation has provisions creating a federal smart buildings initiative establishing a 2.5% annual energy intensity reduction	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

		target for federal buildings for the next 10 years, improving the federal Energy Savings Performance Contracting (ESPC) statute, requiring federal agencies to perform energy and water audits, encouraging improvements to federal data centers – likely to be improved through Energy Saving Performance Contracts (ESPCs), enhancing federal building energy efficiency performance standards and requiring that new designs meet or exceed the most recent model codes. Additionally, we have lobbied 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. On the regulatory side, we worked with U.S. Environmental Protection Agency on how to include third party delivered energy efficiency as a method of reducing energy use and thereby greenhouse gas emissions as part of the Clean Power Plan regulations, which aimed to reduce greenhouse gas emissions in existing power plants under the authority of the Clean Air Act. We are also actively engaged in the development of energy efficiency standards covering our products, and support their advancement in a regular manner.	with advancing energy efficiency RD&D and policy.

Other, please specify HFC Regulation	Support	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 addition, we have worked with the European Partnership for Energy and the Environment (EPEE) on the negotiation of the European F-Gas Regulation. Further, we have hosted at our plant in San Antonio the U.S- India Task Force on HFCs, which is a US State Department and Indian Environmental Ministry task group that includes industrial partners from each country. We seek to influence HFC policies through 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. 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	We support using the lowest GWP option for each application that best fits the needs of our customers from the standpoint of safety, efficiency, reliability, availability, and economy. To that end, we strongly support policies at the national level to transition the HVAC sector toward the best available low-GWP refrigerants practicable, in one consistent manner.

		use in selecting new fluids to comply with future low GWP refrigerant requirement.	
Clean energy generation	Support	In the US, we are engaged in direct lobbying, as well as policy engagement with our allied industry groups and NGOs. In 2016, we were pleased to engage on a variety of key initiatives in the legislative and regulatory arenas. At the Congressional level, we supported the successful extension of the renewable energy investment tax credit for wind and solar and have been working with law makers to also extend the credits for CHP, fuel cells, hydropower, and small wind. At the regulatory level we submitted comments with the Federal Performance Contracting Coalition to the Department of Energy regarding obstacles associated with the implementation of onsite privately owned renewable energy generation projects under Energy Saving Performance Contracts (ESPCs), including potential issues with regard to project eligibility for the federal solar investment tax credit (ITC).	We strongly support the extension of the Section 48 Tax Credit for renewable energy.
Other, please specify U.S. State Climate Action Plans	Support	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	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

		reducing emissions of the built environment. 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 have a seat on the Governor's Task Force on Climate.	and utility demand management programs, and more.
Other, please specify Federal funding	Oppose	We have engaged directly in multiple efforts to oppose proposed legislation that would have removed climate-related language from appropriations bills.	We support federal funding of climate-related activities, research and mitigation.

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

The Business Council for Sustainable Energy (BCSE)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

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

How have you influenced, or are you attempting to influence their position?

MarkLessans, 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.

Trade association

European Alliance of Companies for Energy (EuroACE)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

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.

How have you influenced, or are you attempting to influence their position?

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

Trade association

Alliance to Save Energy

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

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.

How have you influenced, or are you attempting to influence their position?

Katie McGinty, VP and Chief Sustainability Government and Regulatory Affairs Officer, Johnson Controls, is on the board 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.

Trade association

Air Conditioning, Heating and Refrigeration Institute

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Joe Oliveri, VP/GM of Ducted Systems, Johnson Controls, sits on the board of directors of AHRI. 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.

How have you influenced, or are you attempting to influence their position?

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.

Trade association

American Council for an Energy-Efficient Economy

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

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.

How have you influenced, or are you attempting to influence their position?

Clay Nesler, VP Global Energy and Sustainability, is one the board of directors and through this role is active in promoting energy efficiency.

Trade association

European Partnership for Energy and the Environment

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

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.

How have you influenced, or are you attempting to influence their position?

Andrea Vallejo, VP and GM Global industrial Refrigeration is Vice Chair of the board and through this role active in promoting energy efficiency.
Our company is represented as following:

a) Strategy Group: Andrea Lucia Vallejo, Vice Chair, VP and GM Global Industrial Refrigeration Products
b) Steering Committee: Christina von Westernhagen, Director of European Government Relations
c) Paul De Larminat (until end of September 2020) Director Advanced Technologies, BT&S: Impulse team, F-Gas working group
d) 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.

Trade association

European Buildings Automation Controls Association

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

European Buildings Automation Controls association (EU-BAC). Increase energy efficiency and flexibility in buildings by optimizing the use of building automation controls and building energy management systems.

How have you influenced, or are you attempting to influence their position?

Our company is represented by the following individuals:

a) Nils Meinert, Regional Director Controls, BT&S: Board and Building Automation sector group
b) Yann Mahieu, Director Key Account Solutions Europe, BT&S: 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) Chad J Kurszewski Mgr. Engineering BT&S: Technical Panel (Eco Design)
e) 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.

Trade association

National Association of Manufacturers (NAM)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Historically, NAM's position on climate change was only partially aligned with Johnson Controls. However, more recently, 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/or legislation 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.

How have you influenced, or are you attempting to influence their position?

Jeff Williams, President, Global Products for Johnson Controls, is on the NAM Board of Directors. Our former Vice President of Government Relations Mark Wagner previously co-chaired NAM's energy task force where we are continuing to promote initiatives and support for energy efficiency policies.

Trade association

Business Roundtable (BRT)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

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. U.S. businesses are making a positive impact toward sustainable outcomes, which can be seen across major trends such as: Driving Efficiency, Reuse, and Recycling Advancing Renewable Energy Reducing Carbon Emissions Growing Sustainable Investment.

How have you influenced, or are you attempting to influence their position?

George Oliver, Johnson Controls Chairman and CEO, serves as a member of BRT. He is participating in BRT's "Embracing Sustainability Challenge" and produced a video on our commitment which can be found on BRT's website: https://www.businessroundtable.org/policy-perspectives/energy-environment/sustainability and on Johnson Controls' YouTube channel at: https://www.youtube.com/watch?v=O8roO909I3M

Trade association

American Chamber of Commerce to the EU (AmCham EU)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

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.

How have you influenced, or are you attempting to influence their position?

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.

Trade association

Building Decarbonization Coalition (BDC)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

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.

How have you influenced, or are you attempting to influence their position?

Mark Lessans, Director of Regulatory and Environmental Affairs, Johnson Controls, 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.

Trade association

National Association of Energy Service Companies (NAESCO)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

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.

How have you influenced, or are you attempting to influence their position?

Chuck McGinnis, VP Performance Infrastructure North America, Johnson Controls, is the chair 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.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

No

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Our policies, including those relating to climate change and associated strategies are publicly available on our website at: http://www.johnsoncontrols.com/corporate-sustainability/reporting-and-policies

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.

As stated in our Energy and Climate Change Policy, "This policy summarizes our commitments for minimizing our internal and supply chain carbon footprint, providing environmentally responsible products and services and transparently reporting our environmental activities. The policy applies to all Johnson Controls businesses, facilities, employees, and suppliers. Overall implementation is the responsibility of company management with oversight by the CEO, his Executive Operating Team (EOT) and the Board of Directors as appropriate." This policy and the other policies listed above help guide and ensure consistency across our climate change strategy and work. 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. In addition, our Ethics Policy includes a section on Environment, and all employees are required to read and agree to the Ethics Policy on an annual basis.

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

2020 Non-Financial Report.pdf

Page/Section reference

All. See document and comment below.
Non-Financial Disclosure Report:
https://investors.johnsoncontrols.com/~/media/Files/J/Johnson-Controls-IR/annual-meeting-materials/irish-non-financial-disclosure-report-2020.pdf

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Johnson Controls publishes an annual Non-Financial Disclosure Report, submitted by our Chairman and CEO and our Lead Director as part of our Annual Meeting Materials. It includes our organization's response to climate change (page 13) and GHG emissions performance (page 14) along with information on climate and sustainability governance (page 7), strategy (pages 3, 9 -10), Risks and opportunities (page 8), emissions figures (page 14), emissions targets (page 10) and other metrics (throughout).

Here is a direct link to all of our Annual Meeting Materials for 2020, including the Non-Financial Disclosure Report: https://investors.johnsoncontrols.com/annual-meeting-materials

Publication
In other regulatory filings

Status
Complete

Attach the document
johnson-controls-international-plc-fiscal-2019-annual-report-proxy-statement-and-sec-form-10-k.pdf

Page/Section reference
https://investors.johnsoncontrols.com/~/media/Files/J/Johnson-Controls-IR/annual-meeting-materials/johnson-controls-international-plc-fiscal-2019-annual-report-proxy-statement-and-sec-form-10-k.pdf

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment
Sustainability is integrated into Johnson Controls at all levels. Thus, the Fiscal 2019 Annual Report, including proxy statement and SEC Form 10-K, includes our organization’s response to climate change and GHG emissions performance for this reporting year, starting at the beginning on page 2 with our company's Sustainability and Corporate Responsibility Highlights including: "Johnson Controls achieved two significant sustainability milestones in 2019 with respect to its legacy Johnson Controls operations by reducing greenhouse gas intensity by one-half while doubling the energy productivity of these operations over a 16 year period."

Climate response and sustainability is integrated into the Governance of the Company - page 19; strategy - see Building a Performance Culture on page 21; stakeholder engagement - see page 23; and see pages 30 - 33 which specifically detail our climate and sustainability governance, strategy, approach to risk management, emissions targets and figures and other metrics. In addition, note that our Form 10-K includes climate risk on page 11.

Publication
In voluntary communications

Status
Complete

Attach the document

Energy_and_Climate_Change_Policy.pdf

Page/Section reference

Johnson Controls is proud of our sustainability efforts and we have publicly reported sustainability data since 2002. Learn more by checking out the following reports and policies:
https://www.johnsoncontrols.com/corporate-sustainability/reporting-and-policies

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

On this site, you'll find Johnson Controls' response to climate change and GHG emissions performance in several voluntary communications, including:
Governance: Our Energy and Climate Change Policy:
https://www.johnsoncontrols.com/-/media/jci/corporate-sustainability/reporting-and-policies/files/ent-_energy_and_climate_change_policy_june_2016.pdf

Strategy: Our 2025 Sustainability Strategy, including ambitious GHG reductions:
https://www.johnsoncontrols.com/insights/2018/enterprise/features/sustainability-goals-for-2025

Risks and opportunities: https://www.johnsoncontrols.com/-/media/jci/corporate-sustainability/reporting-and-policies/gri/FY2018_files/Johnson%20Controls%20Climate%20Change%20Risks%20and%20Opportunities%20FY18%20-%203%2015

Emissions figures, emissions targets and many other social and environmental metrics can be found in several places including our GRI, Non-Financial Report; Proxy; and in our commitments and policies: https://www.johnsoncontrols.com/corporate-sustainability/reporting-and-policies

Publication

In voluntary sustainability report

Status

Complete

Attach the document

HQ2003006_2020 Sustainability Report v2.4.pdf

Page/Section reference

We recognize the importance of transparency and so report in accordance with the U.N. Global Compact, European Union Non-Financial Disclosure, Global Reporting Index (GRI), CDP, Task Force on Climate-Related Financial Disclosure (TCFD), UN SDGs, and SASB, among others. This 2020 Sustainability Report and GRI Index by Johnson Controls International plc of FY2019 data has been prepared in accordance with the GRI Standards: Comprehensive option.

Content elements

Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment

Governance: page 12 and 56 - 61;
Strategy: pages 3 - 8;
Risks and opportunities due to climate change: page 19 and Risk Management, page 57;
Emissions figures: pages 10, 11, and 68 - 71
Emissions targets: pages 10 & 11
Other metrics: pages 62 - 91

Publication

In voluntary sustainability report

Status

Complete

Attach the document

2019 Johnson Controls United Nations Global Compact Communication on Progress.pdf

Page/Section reference

Johnson Controls first signed the United Nations Global Compact in 2004. Johnson Controls was an early signatory and is a current member of the United Nations Global Compact. We are committed to the Compact’s Ten Principles and operate accordingly.

Content elements

Governance

Strategy
Risks & opportunities
Emission targets
Other metrics

Comment

As part of Johnson Controls' commitment to support the Compact's Ten Principles, each year we update our Communication on Progress (COP) Report as well as meet and report on each of the 21 criterion required to achieve "Advanced Level" status. Our COP Report provides details on how we are implementing the Ten Principles, addressing the United Nations Sustainable Development Goals and meeting many, if not most, best practices under each criterion relevant to our company.

We fully support: the United Nations Global Compact's Ten Principles which are based on The Universal Declaration of Human Rights; The International Labor Organization's Declaration on Fundamental Principles and Rights at Work; The Rio Declaration on Environment and Development; The United Nations Convention against Corruption; and the United Nations Framework on Business and Human Rights.

Publication

In voluntary communications

Status

Complete

Attach the document

BRT-Statement-on-the-Purpose-of-a-Corporation-with-Signatures.pdf

Page/Section reference

Business Roundtable's Statement on the Purpose of a Corporation: https://opportunity.businessroundtable.org/wp-content/uploads/2019/08/BRT-Statement-on-the-Purpose-of-a-Corporation-with-Signatures.pdf

Content elements

Governance
Strategy
Risks & opportunities

Comment

In August 2019, George Oliver joined other CEOs from around the world in signing the Business Roundtable's Statement on the Purpose of a Corporation. This statement included commitments to deliver value to our customers, invest in our employees, deal fairly and ethically with our suppliers, support the communities where we work, embrace sustainable practices across our business, and generate long-term value for shareholders.

C15. 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.

We are honored to be on this sustainability journey with CDP. Johnson Controls is proud to be on more than 40 sustainability indices and are typically given high ESG rankings. We are #18 on the list of 100 Best Corporate Citizens; one of only seven companies to have earned World's Most Ethical Companies 13 years in a row; remain on the S&P ESG 500 when some of our peers dropped; given MSCI AAA rating, Ecovadis Gold Ranking, and are a member of FTSE4Good, DJSI and many others. However, we received a score from CDP last year that was lower than we hoped. Why? You met with us a few months ago and helped us address that question. We have been diligently working since. We have re-cast our board Governance committee the Governance and Sustainability Committee; we have a new Chief Sustainability Officer who reports regularly to the CEO and Executive Committee and every quarter to the board of directors; we just hired a new Executive Director for Sustainability with significant experience and expertise; we conducted extensive climate scenario analysis, looking with our leaders at the climate-related risks and opportunities resulting from these scenarios, and their financial impact. We have a new list of climate risks and opportunities in the CDP, and internally, action plans around them. After we submit this report, our journey continues. We are working with a team of students from the University of Illinois at Urbana-Champaign to help further assess our physical risks. We are examining the climate impact of our products and services. We have more exciting announcements we anticipate making in early 2021 around our continuing commitments to address both transition risks and opportunities. And as just one example, we are excited about the launch of our OpenBlue platform which directly ties to our company's vision of a safe, comfortable and sustainable world and the opportunity to power our customers' success and protect the environment. In addition, we will be announcing our Science Based Target, an even more ambitious renewable energy program, and an ambitious green financing initiative—building on our leadership in being one of the first industrial companies to tie its senior revolving facilities to individual sustainability metrics in the U.S. syndicated loan market. We will undertake these initiatives even as we also accelerate our critically important efforts on diversity and inclusion, community investment and supplier diversity. We recognize the importance of stakeholders in our journey, including CDP, and we thank you for the opportunity to submit this report.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Chairman and Chief Executive Officer	Chief Executive Officer (CEO)

SC. Supply chain module

SC0.0

(SC0.0) If you would like to do so, please provide a separate introduction to this module.

Johnson Controls International plc, headquartered in Cork, Ireland, is a global diversified technology and multi-industrial leader serving a wide range of customers in more than 150 countries. Every day, we transform the environments where people live, work, learn and play. We have a presence in 90 percent of the world's most iconic buildings and our global team of more than 105,000 experts delivers on our customers' missions in industries such as healthcare, education, and data centers. Our company creates intelligent buildings, efficient energy solutions and integrated infrastructure that work seamlessly together to deliver on the promise of smart cities and communities.

In FY2019, Johnson Controls sold its Power Solutions business to Brookfield Business Partners L.P. On May 1, 2019, Clarios, formerly Johnson Controls Power Solutions, relaunched as a new entity and leader in advanced energy storage solutions. Johnson Controls remains committed to helping our customers win and creating greater value for all of our stakeholders through our strategic focus on buildings.

Our commitment to sustainability dates back to our roots in 1885, with the invention of the first electric room thermostat. Johnson Controls businesses are recognized for providing sustainable products, services and solutions. Our customers trust us to provide purposeful technology and insights that improve resilience, safety, and resource efficiency.

• Our Building Technology equipment, including our Metasys smart building solution, continues to help customers such as Maui College and Bee'ah headquarters reduce energy and water costs and greenhouse gas emissions.
• Our Tyco Retail Solutions and other connected offerings help our customers utilize their resources more efficiently.
• Our Tyco Fire and Security offerings help keep people, including first responders, safe and secure. These offerings also help protect the natural and built environment.

Our sustainable products and services and commitment to operational excellence allows us to help our customers, suppliers and other partners reduce their energy use and greenhouse gas emissions and overall improve resource efficiency. We are also committed to continuous improvement in our own operations, including reducing our environmental impact and we are honored to present this report to CDP on our progress.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue

Row 1	23,968,000,000

SC0.2

(SC0.2) Do you have an ISIN for your company that you would be willing to share with CDP?

Yes

SC0.2a

(SC0.2a) Please use the table below to share your ISIN.

	ISIN country code (2 letters)	ISIN numeric identifier and single check digit (10 numbers overall)
Row 1	IE	00BY7QL619

SC1.1

(SC1.1) Allocate your emissions to your customers listed below according to the goods or services you have sold them in this reporting period.

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SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

Allocation challenges	Please explain what would help you overcome these challenges
Other, please specify No challenge with access to sales data	As long as we know what sales are for each customer then we should be able to consistently report the data from year to year using the sales percentage approach.

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

We plan to continue using the sales percentage approach for customers that request the greenhouse gas emissions associated to the business Johnson Controls has with them. We welcome engagement with our customers on this topic.

SC2.1

(SC2.1) Please propose any mutually beneficial climate-related projects you could collaborate on with specific CDP Supply Chain members.

SC2.2

(SC2.2) Have requests or initiatives by CDP Supply Chain members prompted your organization to take organizational-level emissions reduction initiatives?

No

SC3.1

(SC3.1) Do you want to enroll in the 2020-2021 CDP Action Exchange initiative?

No

SC3.2

(SC3.2) Is your company a participating supplier in CDP's 2019-2020 Action Exchange initiative?

No

SC4.1

(SC4.1) Are you providing product level data for your organization's goods or services?

No, I am not providing data

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission	Are you ready to submit the additional Supply Chain Questions?

I am submitting my response	Investors Customers	Public	

Please confirm below

I have read and accept the applicable Terms