

United Technologies Corporation - Climate Change 2018

C0. Introduction

C0.1

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

United Technologies Corporation (UTC) is a diversified global company providing high-technology products and services to the global building systems and aerospace markets. We are the world's largest (total revenue) building systems provider, and our UTC Climate, Controls and Security (CCS) business offers Carrier (air conditioner, building energy management and food cold chain equipment) and Chubb and Kidde brand (fire safety and suppression and security systems equipment). Our building systems business also includes the Otis (elevators and escalators) organization. UTC's aerospace businesses are also leaders in their respective market sectors, and include Pratt & Whitney (aircraft engines) and UTC Aerospace Systems (aircraft and aerospace components). The corporation operates a central research organization focusing on the development of new technologies and those that will improve the performance, energy efficiency and cost of current UTC products and processes.

UTC senior leadership identified the business value associated with longer term, more sustainable performance in 1992, when our first group of environmental and safety performance goals were established. The program identified Greenhouse Gas emissions reductions and energy efficiency as a business imperative in 1997, and since that time we have had formal operational energy and GHG performance requirements. We have also incorporated climate change risk assessment, mitigation and adaptation as part of our formal corporate risk management and governance structure.

UTC's concern about global impacts from a changing climate led us to become an early participant in voluntary external Greenhouse Gas reporting and emissions reduction programs. We were a founding member of the Chicago Climate Exchange and a recipient of a 2005 USEPA Climate Leaders award, and a 2008 Star award from the Alliance to Save Energy. In 2015, we were honored to be placed on the CDP climate change and supplier A Lists. In March 2016 we also received a Climate Leadership Award for 2015 goal attainment from the United States Environmental Protection Agency, Center for Climate and Energy Solutions, and Climate Registry, and in March 2017 we received that organization's Excellence in GHG Management Goal Setting Certificate .

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
Row 1	January 1 2017	December 31 2017	No	<Field Hidden>
Row 2	<Field Hidden>	<Field Hidden>	<Field Hidden>	<Field Hidden>
Row 3	<Field Hidden>	<Field Hidden>	<Field Hidden>	<Field Hidden>
Row 4	<Field Hidden>	<Field Hidden>	<Field Hidden>	<Field Hidden>

C0.3

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

Australia
Belgium
Brazil
Canada
China
Czechia
Denmark
Egypt
Finland
France
Germany
Greece
Hungary
India
Indonesia
Ireland
Israel
Italy
Japan
Malaysia
Mexico

Morocco
Netherlands
New Zealand
Norway
Pakistan
Philippines
Poland
Portugal
Puerto Rico
Russian Federation
Singapore
South Africa
Spain
Thailand
Turkey
Ukraine
United Arab Emirates
United Kingdom of Great Britain and Northern Ireland
United States of America
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 consolidation approach to your Scope 1 and Scope 2 greenhouse gas 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) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual(s)	Please explain
Board Chair	UTC's Board Chair has ultimate managerial responsibility to assure that all board of director responsibilities are properly executed, including the operation of all board of director committees. UTC's climate change impact and Greenhouse gas reduction program is the responsibility of the BoD Committee on Governance and Public Policy (GPP). Our Board Chair attends all GPP meetings and participates directly with all GPP discussions, including the approval of our climate change programs and strategies
Director on board	UTC's climate change impact and Greenhouse gas reduction program is the responsibility of the BoD Committee on Governance and Public Policy (GPP). As with all BoD committees, a board member is assigned to be the chair of the GPP. Twice each year the GPP conducts a review of UTC's progress in our climate change mitigation efforts.
Other C-Suite Officer	UTC's Executive Vice President and Corporate Counsel attends all GPP meetings, and directly participates in the semi-annual discussions pertaining to UTC's climate change and GHG emissions reduction initiatives

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 Reviewing and guiding major plans of action Reviewing and guiding risk management policies Setting performance objectives	UTC's climate change impact mitigation, GHG emissions reduction and energy efficiency programs are discussed twice each year by the Board of Directors Committee on Governance and Public Policy (GPP). The review includes a discussion of progress against program performance objectives, metrics and strategic initiatives and the impacts of facility and process infrastructure investments targeting energy efficiency and GHG emissions reductions. Climate Change risk assessments to our enterprise are included in the overall UTC Enterprise Risk Management process, which is regularly included in presentations to the UTC BoD and committees.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
	Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures Monitoring and overseeing progress against goals and targets for addressing climate-related issues	

C1.2

(C1.2) Below board-level, provide the highest-level management 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
President	Both assessing and managing climate-related risks and opportunities	Half-yearly

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.

Each UTC business unit (Pratt & Whitney, Otis, United Technologies Aerospace Systems and Climate, Controls and Security) has a president who is directly responsible for the implementation of UTC's climate change related risk, opportunities and mitigation program goals and objectives. Day to day senior executive responsibility for the successful implementation of our climate change and GHG related policies and procedures resides with the UTC Corporate Vice President for Environment, Health and Safety, and his business unit EH&S vice president counterparts.

At the business unit president's direction and governance, adherence to all climate change related policies, procedures and progress against performance goals is continuously monitored via direct reporting from over 350 UTC manufacturing facilities around the world into a centralized UTC EH&S data tracking system. The tracking system maintains data on site energy use, GHG emissions, energy efficiency and GHG mitigation project investments and performance against climate change program goals. Program status and all corrective actions are identified and reported to the presidents of each business unit on a quarterly basis. Additionally, UTC's Pratt & Whitney business unit has a P&W Sustainability Council chaired by the P&W VP of EH&S and attended by senior executives from P&W business operation and functional groups. Climate change and GHG emissions are discussed at each sustainability council quarterly meeting, and meeting results are communicated by the VP of EH&S to the P&W president.

C1.3

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

Yes

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues.

Who is entitled to benefit from these incentives?

Chief Executive Officer (CEO)

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Compensation for UTC senior executive leadership includes three components: annual salary, and short and long term performance goals. Attainment of corporate annual sustainability goals, including our annual target for GHG emissions reductions, is included among the short term performance goals for our chief executive officer.

Who is entitled to benefit from these incentives?

President

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

Specific UTC executive officers, including business unit presidents, Environment, Health and Safety (EH&S) and facility operations vice presidents and directors receive monetary rewards for the attainment of annual business targets, including a 3% annual reduction in absolute GHG emissions. UTC Supply Management executives also receive monetary awards for business goal attainment, including an annual goal requiring key suppliers in the UTC Supplier Gold program to reduce energy use and GHG emissions.

Who is entitled to benefit from these incentives?

Facilities manager

Types of incentives

Monetary reward

Activity incentivized

Emissions reduction target

Comment

UTC facility managers receive monetary awards for the attainment of annual business objectives, including attainment of formal facility GHG emission reduction and energy use targets at their facilities, as well as the successful implementation of emissions and energy use reduction projects. Per the UTC compensation program, attainment of these and other objectives is factored into annual salary increase and bonus calculations.

C2. Risks and opportunities

C2.1

(C2.1) Describe what your organization considers to be short-, medium- and long-term horizons.

	From (years)	To (years)	Comment
Short-term	1	5	In determining short, medium and long term climate change related risk and opportunity horizons, UTC considers the likelihood of a specific risk having an impact on UTC, our customers and suppliers, and business opportunities expected to emerge over those three temporal perspectives. Examples of how climate change risk and opportunities may impact UTC across the three time horizons include: Short term risks - business disruptions associated with current and increasing extreme weather events Short term

	From (years)	To (years)	Comment
			opportunity - increased market demand for UTC energy efficient building systems products, in response to current and emerging European building efficiency mandates issued as part of EU national climate change mitigation plans
Medium-term	6	20	In determining short, medium and long term climate change related risk and opportunity horizons, UTC considers the likelihood of a specific risk having an impact on UTC, our customers and suppliers, and business opportunities expected to emerge over those three temporal perspectives. Examples of how climate change risk and opportunities may impact UTC across the three time horizons include: Medium term risks - Increasing commercial aviation sector reputation risks as aviation's contribution to global GHG emissions rises from 2% to 7%+ by 2035 Medium term opportunity - increased market demand for UTC lower emitting commercial jet engine and "electrified aviation" products from airline customers seeking to lower their aircraft emissions in the face of increasing public concern
Long-term	20	50	In determining short, medium and long term climate change related risk and opportunity horizons, UTC considers the likelihood of a specific risk having an impact on UTC, our customers and suppliers, and business opportunities expected to emerge over those three temporal perspectives. Examples of how climate change risk and opportunities may impact UTC across the three time horizons include: Long term risks - Supply chain and other business disruptions associated with permanent sea water and storm surge incursions in low lying coastal areas where UTC and/or supplier sites are located Long term opportunity - increased market demand for UTC energy efficient and zero GWP coolant building and transport air cooling equipment, in response to continuing increases in average global temperatures

C2.2

(C2.2) Select the option that best describes how your organization's processes for identifying, assessing, and managing climate-related issues are integrated into your overall risk management.

Integrated into multi-disciplinary company-wide risk identification, assessment, and management processes

C2.2a

(C2.2a) Select the options that best describe your organization's frequency and time horizon for identifying and assessing climate-related risks.

	Frequency of monitoring	How far into the future are risks considered?	Comment
Row 1	Annually	>6 years	

C2.2b

(C2.2b) Provide further details on your organization's process(es) for identifying and assessing climate-related risks.

UTC's corporate risk management organization is responsible for the annual implementation of our formal Enterprise Risk Management (ERM) process and procedures. The ERM process is documented in the UTC corporate policies and procedures manual and audited by both internal and external auditors. Our ERM process requires each UTC business unit, functional group and manufacturing location to annually review a comprehensive range of potential business risks. Included in the analysis are potential physical facility risks, supply chain disruptions, impacts from new and emerging GHG emissions and energy efficiency regulatory requirements, and climate change related impacts to our financial, market, legal, and reputational performance. Both short and longer term climate change related risks are included in the assessments.

The annual ERM process begins at the asset level of each business unit and UTC functional area, and elevates identified risks through subsequent levels to create a company risk profile. At each level of the process applicable risks to that part of the organization are identified for management assessment and action planning. Not all climate related risks apply to each level, and the ERM process matches risk and level. For example, the ERM assessment at a Pratt & Whitney facility will include a review of climate change related physical risks to the facility, but it wouldn't include a review of overall Pratt & Whitney reputational risks associated with UTC corporate climate change policy. That risk would be assessed during the climate change risk assessment review at the UTC EH&S, Communications and Government Affairs groups.

At each level of the process all applicable risks, climate change related or other, that meet formal criteria are identified and reported to the next level of organizational management. Those managers in turn will assess the risk reports from the business units under their management, and develop their own list of risks to be reported up to the next level of management. Through this structured process UTC business unit risks are assessed and consolidated to present a corporate review for the presidents of UTC's business units, other senior executives and UTC Board of Directors.

Our ERM process quantifies each risk based on a formula that includes risk imminence, potential operational or financial impact, and UTC's current ability and additional resources needed to obviate the risk. The prioritization formula puts primacy on those risks that may impact UTC soonest, those with the greatest potential for harm and those requiring senior management attention or lead time. The prioritization and plans for addressing each risk are included in annual business unit and site risk management plans, and progress against plan is assessed throughout the year as part of regularly scheduled performance reviews. In the area of climate change related risks, risk imminence is the key discriminator for our risk prioritization. We classify storm surge, severe storms, drought, and supplier and transportation infrastructure disruptions to be imminent in the short term (1-5 years) since we've already encountered them during our recent past.

UTC does not have a numeric or formulaic definition of "substantive" risk that applies across the board. Our ERM process mandates the identification and reporting of risks in keeping with the level of impact associated with the risk and the level at which the risk may impact our business. Managers are charged, therefore, to address all risks that would be "substantive" to their part of our organization. For example, supplier delivery disruptions due to local seawater incursion and roadway flooding would have different risk profiles if one supplier was delivering a critical part for an emergency repair while another supplier was unable to deliver more routine commodities.

C2.2c

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

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	UTC's Enterprise Risk Management process requires the assessment of all current regulations on the part of the business conducting the risk assessment. Consequently, climate change regulations, where they exist, are always included in the annual risk assessment. Examples of this can be seen in our European Union operations, where the EU Energy Efficiency regulations mandate building energy efficiency measurement and performance requirements. These regulations present a regulatory compliance risk for all UTC facilities subject to the regulation as well as a risk to our building energy and infrastructure management customers in the EU. New regulations could require UTC to invest in new, more energy efficient building infrastructure such as heating, cooling and insulation and automated building control systems.
Emerging regulation	Relevant, always included	UTC's Enterprise Risk Management process requires the assessment of all emerging regulations that might impact the part of the business conducting the risk assessment. Emerging climate related regulations that might impact any part of our business will always be identified and assessed as they develop. An example of an emerging regulation that we assessed was proposed USEPA regulations on new jet aircraft engine emissions, which potentially could have a significant impact on our Pratt & Whitney jet engines and our customer use of those products. These regulations could require UTC airline customers to either modify or retire older jet engines, which could result in changes to UTC's service revenue for ongoing maintenance of customer engines.
Technology	Relevant, sometimes included	Climate change mitigation and lower GHG emitting product technologies have a substantial potential impact on our jet engine and refrigeration and cooling businesses. These include lower CO2 emitting jet engines and cooling technologies using refrigerants with lower or zero global warming potential chemicals. The market risks (and opportunities) associated with these technologies are continuously assessed in those parts of UTC that participate in these market sectors. The development of new and superior technology in our markets is a fundamental business imperative for UTC, and increases in the pace of technology development associated with new climate impact mitigating technologies would require us to spend more on research and development and defend our market share from new technology providers.

	Relevance & inclusion	Please explain
Legal	Relevant, sometimes included	UTC's Enterprise Risk Management process requires the assessment of all potential legal liabilities associated with the operation of the corporation and its businesses. An example of this potential liability can be seen in UTC's public reporting of energy and GHG data, and its inclusion in financial reporting documents subject to regulation by the US Security Exchange Commission.
Market	Relevant, sometimes included	UTC is a global leader in almost all of the market sectors in which we participate, and the continuing assessment of market risks is integral to UTC operations. A good example of that is the market for highly energy efficient building equipment products, developed in some part to serve the Green Building industry. UTC managers in those sectors closely monitor ongoing sector and competitive product developments to identify any climate change related and other market risks requiring further action. These actions and increases in R&D spending to compete in new markets would all increase UTC's operating costs.
Reputation	Relevant, sometimes included	Reputational risks are generally in the purview of UTC corporate and senior business unit executives. Risks to UTC's reputation associated with our climate change policies and programs, external advocacy and physical impact reduction are assessed by our Environment, Health and Safety, Legal, Government Affairs and Communications functional groups. Climate change presents an emerging risk for UTC, particularly in the use of our jet engine products. Jet engine emissions currently represent 2% of global anthropogenic totals, and are expected to be 7% of the total by 2025. Public sentiment about emission sources could change as the impacts of climate change become more apparent, and as a provider of those emission sources UTC could be increasingly seen in a negative light.
Acute physical	Relevant, always included	Acute physical impacts to our facilities and suppliers are included in our annual ERM process. Current risks include storm surges, extreme weather events, and energy supply disruptions associated with both storms and forest fires. UTC has seen disruptions to our business from large tropical storms and floods, including disruptions to our supply chain and physical damage and temporary closure of UTC manufacturing facilities. Climate change will result in an increase to these types of events, which increases UTC's risk.
Chronic physical	Relevant, always included	Chronic physical impacts to our facilities and suppliers are included in our annual ERM process. Current risks include sea level rise, drought and the infrastructure and municipal cost burden on communities contending with mitigating climate change impacts. This latter concern may impact the quality of life for UTC employees living in low lying areas, which in turn can effect our ability to retain employees in those communities.
Upstream	Relevant, sometimes included	UTC includes an assessment of the potential for supply/business disruptions from UTC key and critical suppliers. Included in this assessment is a review of climate change related physical impacts that may impact supplier performance, and a discussion with those suppliers of both their risk assessment process and plans to address potential business disruption risks. UTC has experienced disruptions to our supply chain in association with storms and our risks of this will increase as storm frequency and severity increases due to climate change.
Downstream	Relevant, sometimes included	As part of our regulatory risk review, our jet engine and refrigerant business units assess the potential risks of customer uses of our products. The markets for both global aviation and global use of air conditioners are growing rapidly, and UTC is aware that the overall percentage of global anthropogenic GHG emissions associated with those technologies will increase during the next fifteen years. This in turn could potentially lead to those technologies receiving more scrutiny and pressure to reduce product use emissions than they are under today.

C2.2d

(C2.2d) Describe your process(es) for managing climate-related risks and opportunities.

UTC manages climate-related risks and opportunities as we manage all risks and opportunities - through formal business policies, procedures and practices. While climate is a unique driving mechanism, the resulting risks and opportunities do not require unique approaches outside of our normal business practices.

Our ERM process quantifies each risk based on a formula that includes risk imminence, potential operational or financial impact, and UTC's current ability and additional resources needed to obviate the risk. The prioritization formula puts primacy on those risks that may impact UTC soonest, those with the greatest potential for harm and those requiring senior management attention or lead time. The prioritization and plans for addressing each risk are included in annual business unit and site risk management plans, and progress against plan is assessed throughout the year as part of regularly scheduled performance reviews. In the area of climate change related risks, risk imminence is the key discriminator for our risk prioritization.

Opportunities are prioritized based on market potential, UTC's expertise and affinity for the product technology and marketplace, and the overall financial, technological advancement and short and long-term strategic potential of the opportunity when compared with other opportunities under consideration. Globally, climate change mitigation presents UTC with significant opportunities that we are pursuing in energy efficient building equipment and services, global aviation GHG emissions reduction, and global food supply waste reduction and cold chain improvement.

An example of our risk prioritization process, resulting in executive action can be seen in our response to a physical climate related risk, the 2012-2016 Southern California drought. UTC identified the drought as an imminent threat to the ongoing operation of our Southern California aerospace facilities. In response, the facilities implemented a series of best management practices that resulted in an annual reduction in water use of over 20%. Many sites made additional investments in plant water management and process infrastructure to both further reduce water use and prepare the facilities for a more water constrained future.

Our process also applies to transition risks, an example of which can be seen in the global refrigeration markets movement from higher Global Warming Potential Refrigerants to those with lower or even zero GWP. UTC and our Carrier business unit identified this transition risk in the early 2000s as the industry identified the need to replace the high GWP hydro-fluorocarbon refrigerants developed to replace Ozone Depleting Substance refrigerants with lower GWP chemicals. Carrier management identified the potential risk to their business of failing to address refrigeration needs in a GHG constrained world, and invested millions of dollars in R&D to develop refrigeration products that in 2018 are global leaders in low GWP and energy efficiency technology.

UTC's risk assessment and opportunity capture activities are fully integrated across our business units, and include participation from all parts of the organization, including marketing, engineering, EH&S, supply management, finance, legal, operations and communications.

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?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Mandates on and regulation of existing products and services

Type of financial impact driver

Technology: Reduced demand for products and services

Company- specific description

UTC's Pratt & Whitney jet engine and Carrier refrigeration technology units are global leaders in their respective industries. Each produces products that make modern life possible, and both the success of their products in the market place and product energy use and product use GHG emissions combine to make our jet engines and refrigeration technology significant sources of global anthropogenic emissions. Using the number of P&W jet engines and Carrier products in current service, forecasts of both expanded sales, and anticipated reductions in other global GHG emissions sources, these two UTC product types combine for over 1% of global anthropogenic emissions. Both product types provide best in class GHG and energy use profiles, but in an increasingly carbon constrained world featuring increased regulation on GHG emitting sources, the climate related regulatory requirements for these products present a

substantive risk. UTC believes that our continuing R&D and technology improvements will result in products that remain best in class and fully meet all regulatory requirements, and anticipates continuing regulatory action to reduce product climate impacts.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium-high

Potential financial impact

10000000

Explanation of financial impact

UTC revenues from jet engine and refrigeration sales and service is in the billions of dollars. The financial impact of potential regulations on our product revenues can't be reasonably estimated. For example, if an energy efficiency regulation requiring specific levels of performance for commercial rooftop chillers came into effect, it might be that the regulation imposes a new performance threshold that makes an older model of product no longer commercially viable. The extent to which new regulation, older and newer model performance and financial factors including energy cost, lending rates and capital depreciation rules combine to define commercial viability presents a huge number of potential permutations. This renders revenue forecasts associated with emerging regulation too broad to accurately estimate.

Management method

Pratt & Whitney and Carrier senior executives remain fully engaged in the regulatory development process impacting their businesses and primary products. Carrier was an active participant in the development of the European Union F-Gas regulations, that went into effect in January 2015. Company refrigerant and regulatory affairs experts provided technical expertise to EU regulators developing the F-Gas rule. In 2016, significant outreach was made to EU regulators to explain the benefits of Carrier's PUREtec, HFO-1234z(E), low GWP cooling and heating technology. In Europe, Carrier is striving to develop products that use refrigerants with GWP values under 150. Pratt & Whitney engineers regularly provide expert testimony and public commentary in response to jet engine emissions reduction programs and regulations as proposed by the United Nation's International Civil Aviation Organization (ICAO), USEPA and European Union regulators. Pratt & Whitney personnel serve on industry work groups that engage directly with policy makers on the reduction of aviation GHG emissions, including: the International Air Transport Authority, Environment Committee, and the Air Transport Action Group (ATAG). The market intelligence gained from this management process informs both Pratt and Carrier R&D and new product development planning. UTC has annually committed to R&D funding levels (2017 total of \$3.9 billion) that keep our products best in class performers.

Cost of management

1000000

Comment

Since climate related risk and opportunity management is fully integrated into UTC overall risk and opportunity management processes and practices, there is no way to accurately assess that portion of management costs associated with climate related matters.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Chronic: Changes in precipitation patterns and extreme variability in weather patterns

Type of financial impact driver

Reduced revenue from decreased production capacity (e.g., transport difficulties, supply chain interruptions)

Company- specific description

UTC has over 350 manufacturing facilities around the world. Many are located in areas including Eastern China, Northern Mexico and parts of India that are currently and/or historically impacted by the risks from drought, other water scarcity and precipitation extremes. To date, precipitation and drought events have occasionally resulted in disruption to our operations, supply chain and transport infrastructure and created difficulties in meeting all of our customer demands. Using climate model forecasts, UTC anticipates that climate change will increase the number of extreme participation and drought events effecting our sites and suppliers. Drought and water scarcity remain a particular concern for UTC in the Western US, China, India and Mexico, including sites located in the Bravo (Mexico) and Yongding He (China) river basins.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-low

Potential financial impact

1000000

Explanation of financial impact

Precipitation and drought based disruption to UTC operations, including our supply chain, could result in cost impacts ranging from \$1 million to over \$10 million, depending on whether an event was modest and resulted in relatively small disruptions or one that was historic and catastrophic. Impacts could include emergency water supply or other impact mitigation costs, short or longer term curtailment of factory operations, facility relocation, or product late-delivery fines and associated customer dissatisfaction.

Management method

UTC manages this risk by identifying at-risk sites through the use of the World Business Council for Sustainable Development (WBCSD) Water Risk Tool and WWF Water Risk Filter, and by requiring mandatory water use reductions and water best management practices at these locations. In places where water intrusion has occurred, UTC also implements site infrastructure hardening projects to mitigate future water intrusion risks. These management methods are estimated to reduce our physical water risks by approximately 25%. The development of our best management practices program provides a case study. During 2006 - 2015 our mandated water reductions resulted in annual reductions of over 1 billion gallons. To drive further risk reduction, we developed a suite of best management practices and mandated their adoption proportionate to site water use and local scarcity. The practices are a mix of simple activities, such as checking water lines for leaks, and more complex process re-engineering actions. Collectively, they've been invaluable both as a means of reducing water use and as an education device to demonstrate how straight-forward and impactful water reduction efforts can be. Individually, the right practices at the right sites have provided remarkable benefits, reducing millions of gallons of water use at UTC sites as diverse as Monterrey Mexico, Bengaluru India, and Sao Bernardo Do Campo Brasil.

Cost of management

200000

Comment

UTC's management of extreme precipitation and water scarcity risks includes the use of the WBCSD and WWF water risk tools, assessment of site risks, communication and tracking of both the absolute water use reduction goal and implementation of water best management practices.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Transition risk

Primary climate-related risk driver

Policy and legal: Enhanced emissions-reporting obligations

Type of financial impact driver

Policy and legal: Increased operating costs (e.g., higher compliance costs, increased insurance premiums)

Company- specific description

UTC facilities in Connecticut, Canada, the European Union and United Kingdom are subject to mandatory emissions reporting under their respective national regulatory programs. The UK CRC Energy Efficiency Reporting Scheme (CRC), for example, requires 67 UTC sites in the United Kingdom to report annual use of electricity and natural gas, and purchase and surrender CO2 emissions allowances for the amount of CO2 generated by our energy use. In 2015, seventeen UTC sites in the UK and other EU countries became subject to mandatory energy opportunity reporting under the Energy Savings Opportunity Scheme (ESOS), as part of the EU Energy Directive. As a result of COP 21 and signatory countries Intended Nationally Determined Contribution plans, UTC anticipates that changes in national regulations will result in more emission reporting obligations consistent with those seen to date.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Low

Potential financial impact

250000

Explanation of financial impact

UTC's current mandatory annual GHG management and reporting labor costs are estimated at \$150,000. We believe mandatory reporting will increase for us in various locations around the world. Based on the labor cost associated with current reporting, we estimate an additional cost of \$100,000 should we be required to report all emissions currently not subject to reporting regulations.

Management method

Our management method includes ongoing implementation of efficient data collection and reporting, and the implementation of site energy efficiency projects that sometimes drop sites under the regulatory threshold for mandatory GHG emissions reporting. These methods are expected to reduce potential mandatory reporting risk by approximately 20% during any regulated reporting period. UTC's experience in the United Kingdom provides a good case study of both management methods in action. Over 75 UTC UK site professionals received training on the

requirements of CRC reporting requirements and UTC CRC data quality standards. The training resulted in more accurate quantification of subject emissions and the identification of sites with energy use profiles that no longer qualifies them for CRC reporting. UTC also requires all manufacturing facilities to audit and identify GHG emission reduction opportunities, and record all opportunities in a centralized database. The projects have contributed to a 34% reduction in global GHG emissions since 2006, and in the UK has allowed us to reduce our annual CO2 allowance spend by over \$100,000.

Cost of management

75000

Comment

Management of the mandatory emissions reporting data collection and quality program costs approximately \$75,000 per year. The average annual cost of site energy efficiency and GHG reduction projects is approximately \$10 million

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?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Type of financial impact driver

Increased revenue through demand for lower emissions products and services

Company- specific description

Building equipment energy efficiency regulations and standards have become primary components of national and urban government climate change mitigation strategies, including Intended Nationally Determined Contribution (INDC) plans. New regulations are acting as significant market drivers for UTC's Carrier, Otis and Climate, Controls and Security business units, and have increased demand for UTC energy efficient building and low GHG emitting products.

Regulations and standards that have positively impacted our business include the EU Energy Efficiency Directive, ISO 27745 and VDI 4707 standards for the energy efficiency of elevators and escalators, revisions to LEED, and Chinese provincial requirements. For example, the European Union Energy Efficiency Directive requires EU countries to adopt binding legislation in several areas, including national 30% efficiency improvements by 2020, establishment of national energy efficiency action plans for buildings and critical systems, public sector purchasing of energy efficient buildings, products and services, and a program of mandatory corporate site energy audits. Provincial centers in China, and large US cities including New York, Chicago and Seattle have adopted similar, comprehensive programs. UTC believes these initiatives will continue to stimulate increasing demand for the best in class building equipment including our Otis elevators Carrier refrigeration products, and NORESKO energy management products. Global aviation faces a monumental challenge in a carbon constrained world, especially considering an anticipated doubling of commercial aircraft by 2030. To meet industry GHG reduction commitments, fleet operators must make profound changes to their operating emissions profiles. UTC's Pratt & Whitney (P&W) has produced a new breed of jet engine, the Geared Turbofan (GTF) which improves fuel use and reduces CO2 emissions by 15% compared to other engines in flight today. At the end of 2016, P&W had committed orders for over 8,000 GTF engines. By 2025, use of these engines will avoid an estimated 160 million mtCO2 when compared to normal engine operation. The aviation industry commitment to GHG emissions reductions presents UTC with an unprecedented market driver and opportunity to assist participating airlines in this challenging undertaking.

Time horizon

Current

Likelihood

Virtually certain

Magnitude of impact

High

Potential financial impact

1000000000

Explanation of financial impact

UTC's building efficiency and jet engine technologies are at the heart of our product base. The value of high technology, energy efficient and reliable products which may remain in use for decades has been proven during our history and is

anticipated to increase in an increasingly carbon constrained world. Changes to regulatory standards that highlight the value of our products in energy efficient markets could be expected to increase UTC sales.

Strategy to realize opportunity

UTC uses new product engineering research and development as the primary management method to optimize the opportunities afforded by energy efficient product regulations. Product energy efficiency regulations emerged as national and regional GHG emissions mitigation tools over ten years ago, and in response, UTC committed to making our products best in class while exceeding regulatory standards. This management method, coupled with effective product pricing and sales, is essential to our success in capturing the opportunities in these markets. An example of this management method can be seen in the Otis' Gen2 elevator system. The Gen2 reduces energy usage by up to 50 percent compared to conventional systems, and when combined with ReGen™ drives, reduces overall elevator energy usage by up to 75 percent. ReGen drives feed energy usually lost during braking back into the building's internal electrical grid, where it can be used by other loads or users connected to the same network. In addition to R&D, during 2017 UTC also employed direct engagement with US, EU and Chinese legislators and regulators as a management method. Our experts provided direct testimony and formal responses to regulatory language, and worked hard to make sure that new regulations supported the use of advanced, energy efficient building and refrigerant technology.

Cost to realize opportunity

100000000

Comment

UTC spent \$3.9 billion on R&D during 2017, and does not publish individual amounts spent on developing greater energy efficiency within a product category.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Customer

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Type of financial impact driver

Increased revenue through demand for lower emissions products and services

Company- specific description

The International Civil Aviation Organization (ICAO) is a United Nations specialization agency charged with working with 191 UN member states to reach consensus on global aviation policies and practices. ICAO has been assigned the lead role in developing a global commercial aviation program to mitigate aviation CO2 emissions in keeping with UN IPCC targets that limit average global temperature increases to 2 degrees C by 2050. ICAO's plan was finalized and ratified during 2016, and commits to improve fuel efficiency by an average of 1.5% per year to 2020; stabilize carbon emissions from 2020 with carbon-neutral growth; and reduce net carbon emissions 50% by 2050 compared to 2005. ICAO faces a monumental challenge, especially considering an anticipated doubling of commercial aircraft by 2030. Major changes in how commercial aviation operates must occur if any ICAO GHG emissions targets will be met, and UTC's Pratt & Whitney (P&W) have produced a transformative jet engine. The P&W Geared Turbofan (GTF) technology, improves fuel use and reduces CO2 emissions by 15% compared to other engines in flight today. At the end of 2016, P&W had committed orders for over 8,000 GTF engines. By 2025, use of these engines will avoid an estimated 160 million mtCO2 when compared to normal engine operation. The ICAO agreement presents an unprecedented market driver and opportunity for P&W to assist participating airlines to meet their share of ICAO goals while reducing their cost of fuel by over 15%.

Time horizon

Current

Likelihood

Virtually certain

Magnitude of impact

High

Potential financial impact

1000000000

Explanation of financial impact

Current Boeing and Airbus new aircraft sales forecasts for 2015 - 2030 indicate new jet engine sales of approximately \$460 billion, and with 8,000 units sold to date, Pratt & Whitney's 15% less CO2 emitting geared turbofan engines have already demonstrated significant appeal in this dynamic marketplace. We believe that the scale and direction GTF engine sales revenue will continue to increase, and could have financial implications for UTC of over \$10 billion.

Strategy to realize opportunity

UTC's management methods include market analysis, product engineering and development, and commitment of resources to successfully address the new market need. These methods are essential to our success in capturing this opportunity. The development of the Geared Turbofan (GTF) is our best case study for these methods. UTC market analysis in the late 1990's identified a potential doubling of commercial aviation by 2030 as airlines responded to increasing urbanization and a 2 billion person increase to the global middle class. Central to airline success would be

reduced costs of operation and CO2 emissions reductions needed to meet anticipated regulatory requirements. In response to the opportunity, UTC invested over \$10 billion in the development of the GTF. Our P&W jet engine technology experts also consulted directly with ICAO, USEPA, the Federal Aviation Administration, the EU Environment Agency, and other regulators to ensure that the CO2 emissions reduction potential of GTF technology would be included in agency jet engine performance standards.

Cost to realize opportunity

100000

Comment

UTC's ongoing participation with ICAO and other industry groups dedicated to international civil aviation and responsible climate stewardship.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Other

Type of financial impact driver

Reduced operating costs (e.g., through efficiency gains and cost reductions)

Company- specific description

UTC first linked our commitment to reducing operational climate change impacts to improved business performance in 2006. At that time, we committed to reducing our absolute GHG emissions by 3% per year, regardless of business growth, and to invest \$100 million in operational energy efficiency improvements by 2010. Since that early start, we have invested over \$150 million in energy efficiency at our factories and continued our annual 3% absolute GHG emissions commitment. Our investment has resulted in over 8,000 energy efficiency projects at over 350 facilities world wide, with an average project return on investment of under 4 years. These energy investments have resulted in cumulative energy cost savings of over \$400 million and an over 32% reduction in absolute GHG emissions when compared to that 2006 baseline.

Time horizon

Current

Likelihood

Virtually certain

Magnitude of impact

Medium

Potential financial impact

100000000

Explanation of financial impact

The financial impact numbers represent an approximation of UTC's energy cost savings as a result of our investment in energy efficient and GHG emissions reduction projects. UTC does not publish exact project performance and cost savings information.

Strategy to realize opportunity

UTC annually conducts energy efficiency audits at our manufacturing sites around the world. These audits are required by our UTC Standard Practice 017, which mandates that all potential energy efficiency and GHG reduction projects identified during the audit be reported into UTC's centralized EH&S project data system. Candidate projects are then annually considered for funding and implementation under UTC capital allocation process and schedule. Those projects that meet our criteria for GHG reduction impact and business value are then funded and implemented.

Cost to realize opportunity

119000000

Comment

C2.5

(C2.5) Describe where and how the identified risks and opportunities have impacted your business.

	Impact	Description
Products and services	Impacted	UTC produces over 100,000 individual products, ranging from jet engines to small components included in physical security systems. Not all of our products and services are impacted by substantive climate related risks and opportunities, but for those that are the impacts to our business operations are broad reaching. Potential regulatory risks have resulted in changes to UTC's R&D programs and budgets; engineering and factory processes; and marketing, communications and Government Affairs plans, as these groups have both incorporated new and emerging climate related regulations into their planning, but then implemented the plans in order to capture the sales opportunities associated with the new regulatory environment. Climate change related risk and opportunities have a potentially large financial impact on UTC.
Supply chain and/or value chain	Impacted for some suppliers, facilities, or product lines	UTC has encountered supply chain disruptions due to large precipitation and sea water intrusion events. These have led to delays in receiving parts and materials used at some of our manufacturing facilities, and in a small number of incidents resulted in having to obtain additional suppliers or maintain extra inventory to mitigate potential future disruptions.

	Impact	Description
		Disruptions to UTC suppliers from any significant event, such as a major storm, could result in \$1 million or more in costs, depending on the extent of the event and scope of impacts on supplier operations.
Adaptation and mitigation activities	Impacted for some suppliers, facilities, or product lines	UTC has invested millions of dollars in hardening our water security infrastructure in drought impacted areas around the world. We have implemented twenty energy and water best management practices - specifying processes to be used to optimize energy and water use - at all of our over 350 manufacturing facilities. These facilities are also required to meet our 2020 sustainability goals, which include mandatory reductions in annual water use and GHG emissions of 5% and 3% respectively.
Investment in R&D	Impacted	Climate related risks and opportunities - including the need to provide customers with refrigeration, aviation and building systems technologies that meet or exceed energy efficiency and GHG emissions standards - are increasingly included in UTC's annual R&D budget. UTC's 2017 R&D investment totaled \$3.8 billion.
Operations	Impacted	UTC factory and operations directly identify and mitigate both physical climate related risks as well as similar risks potentially impacting factory suppliers. Climate related risk assessments are integral to factory and operations Enterprise Risk Management and mitigation planning. These facilities are also required to meet our 2020 sustainability goals, which include mandatory reductions in annual water use and GHG emissions of 5% and 3% respectively. Additionally, in some jurisdictions such as the United Kingdom UTC factories are directly subject to national carbon fees. National climate related water management programs, such as Singapore's NEWater mandatory water recycling also impact UTC operations. Damage to a UTC site from significant storms or water intrusion damage could result in \$1 million or more in costs, depending on the scope of the storm and local site conditions.
Other, please specify	Please select	

C2.6

(C2.6) Describe where and how the identified risks and opportunities have factored into your financial planning process.

	Relevance	Description
Revenues	Impacted	As noted in multiple discussions above, climate related regulations and other impacts present and opportunity and driver for UTC products include Geared Turbofan jet engines and energy efficient and low or zero Global Warming Chemical refrigeration. These factors influence sales of our products, and are included in all sales and revenue forecasts and plans.
Operating costs	Impacted for some suppliers, facilities, or product lines	UTC operating costs at some of our facilities are impacted by physical climate related risks, due to plant actions to mitigate potential climate related risks. An example of this can be seen at any of our sites in water constrained areas, all of which have invested in technology and best management practices designed to minimize our use of water. Other direct operating cost impacts include energy efficiency investments, and associated savings, made at UTC plants around the world in support of our annual GHG emissions reduction requirement of 3%.

	Relevance	Description
Capital expenditures / capital allocation	Impacted for some suppliers, facilities, or product lines	Capital expenditures and allocation are impacted at those sites making capital equipment and other investments in water and energy usage reduction process changes and other equipment, in support of UTC's annual water and energy use reduction goals.
Acquisitions and divestments	Not evaluated	
Access to capital	Not evaluated	
Assets	Not evaluated	
Liabilities	Not evaluated	
Other	Please select	

C3. Business Strategy

C3.1

(C3.1) Are climate-related issues integrated into your business strategy?

Yes

C3.1a

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

Yes, qualitative and quantitative

C3.1c

(C3.1c) Explain how climate-related issues are integrated into your business objectives and strategy.

UTC first identified climate change as a strategic issue in 1997, when we established our first formal corporate and facility energy efficiency and GHG emissions reduction targets. This early program has since expanded from a primarily EH&S initiative and is now fully integrated into our overall business strategy:

Influence of climate related data on our businesses - UTC is a data driven organization and our business strategy is influenced by data. For over 20 years we've quarterly measured and reported the significant financial and environmental benefits of our climate change related programs, including site and vehicle energy use, GHG emissions, and energy

improvement project performance from over 350 manufacturing facilities and 4,100 sales and administrative offices world wide, and sales of lower GHG emitting products. The data tell the tale in each of these areas and are a valuable tool included in the analysis of business performance.

Business strategy - The integration of climate related issues into our business strategy can best be seen in our development of the geared turbofan jet engine (GTF). UTC spent \$10 billion in the development of the GTF in the belief it's GHG emissions reduction profile would prove invaluable to our commercial aviation customers. With over 8,000 engines sold and adding to top line growth, incorporating climate related issues into our strategy has clearly proven to be a success.

Climate change aspects influencing our strategy - The climate related aspects influencing our strategy include: 1) changing regulation, which will increasingly require UTC and our customers to report emissions, reduce operational energy use and GHG emissions, and reward us in the marketplace by helping our customers operate in an increasingly carbon constrained environment, 2) physical risks, which will present site and business disruption challenges to UTC, our suppliers and customers, and 3) market risks, which threaten to disrupt the continuing growth of the global middle class, and in turn, disrupt their purchase of UTC building energy efficiency and cooling, food refrigeration and transport products.

Short-term (1-5 years) strategies - In 2015 UTC's CEO identified UTC public advocacy for aggressive business action on climate change as a renewed UTC imperative, and we have pursued that agenda as advocates for pending global improvements in energy efficient building standards, aviation emission caps and expanded global food supply cold-chain infrastructure. Other short term initiatives include: continuing sales of lower GHG emitting and energy efficient products, expansion of our site energy efficiency and GHG emissions reduction project funding, mandated 3% annual absolute GHG emissions reductions (Scope 1 and 2 GHG emissions), and mandatory annual energy efficiency improvements for our key suppliers.

Mid term (6 - 20) strategies - Mid term strategic initiatives include: development and sales of lower GHG emitting and energy efficient products, annual UTC operational GHG emissions reductions of 3%, global advocacy for LEED and European Union energy efficient building standards and regulations, support for the implementation of a fair and uniform plan to minimize global commercial aviation sector emissions, continued investment in energy efficiency projects at our sites, collaboration with our suppliers on annual improvements to their GHG emissions footprints in the face of increasing UTC business, and continued R&D (\$3.9 billion in 2017) to develop products that will support our customer operations on an increasingly carbon constrained planet.

Long term (20 -50) strategies - UTC expects the world to be significantly carbon constrained in 2040 and, if history is a judge, will be fully engaged in advocating for continuing climate stewardship while providing customers with products and services that support adherence to global climate related goals.

How the Paris Agreement has influenced our business strategy - UTC supported the Paris Agreement and has committed to meeting GHG emissions reductions consistent with UN objectives to limit global average temperature increases to 2 degrees C by 2100. The agreement's emphasis on Intended Nationally Determined Contributions (INDCs) will present UTC with opportunities for advocacy and sales of current and planned energy efficient products, as these technologies are integral to many INDCs.

Strategic advantage over competitors - UTC's climate change strategy significantly reduces our operating costs, increases our operating efficiency and brings to market a portfolio of energy efficient, lower GHG emitting products that are transforming key global markets. An example of this advantage can be seen in the GTF, which will drive unprecedented growth at UTC's Pratt & Whitney business during the next ten years. We see comparable potential in offering customers best-in-class energy efficient elevators, air conditioners, chillers and global food transport refrigeration, and other building management products specifically designed to help customers thrive in an increasingly carbon constrained world. Our over \$200 million investment in facility energy efficiency and GHG reduction projects has reduced our overall energy costs and made us more cost competitive when compared to competitors.

Substantive business decision - UTC's \$10 billion investment in the development of the Geared Turbofan Engine (GTF) represents the most substantive business decision we made that was influenced by climate change. CO2 emissions from commercial aviation represent approximately 2% of global anthropogenic GHG emissions, and our commitment to developing a more efficient, lower emitting engine was based on our belief that the GTF will find broad acceptance in an increasingly carbon constrained world.

C3.1d

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

Climate-related scenarios	Details
2DS	UTC has used three scenario models to identify potential future climate-related physical and market projections. The three models were IEA B2DS, RCP 2.6 and 2DS. Additionally, UTC conducted internal sensitivity analyses looking at the potential business impacts associated with a range of carbon costs,

Climate-related scenarios	Details
	<p>refrigerant regulations, building efficiency codes and standards, physical climate change impacts and employee/community impacts. We don't use scenario modeling to predict the future, and instead use modeling to identify the range of impacts and opportunities our climate related programs should include. Of the models we used, we think the IEA 2DS transition risk pathway best encapsulates the central issues facing UTC and our markets. The model applies well to corporations like ours who consider energy efficiency as a central imperative for responsible climate stewardship. In the model, energy efficiency improvements represent 40% of the Intended Nationally Determined Contributions (INDCs) associated with the Paris Accord. If the INDCs are implemented consistent with published plans, this 40% improvement in energy efficiency represents a huge opportunity for UTC's energy efficient products. The 2DS provides sectoral analyses of progress against published INDC goals. Four UTC market sectors show significant opportunities for improvement: Building Efficiency - "Not on Track" Aviation - "More Effort Needed" Transport Biofuels - "Not on Track" Industry - "More Efforts Needed" Each of these sectors present us with opportunities for our products and services to help sector members meet their INDC commitments. UTC selected the 2DS model for use in scenario modeling since it more accurately reflects the energy efficiency focus of our climate change mitigation strategy, and that of our customers. We used the standard inputs and settings for the model and looked at a 2050 time horizon, since that reflects our programs' commitment in keeping UNIPCC 2 degree targets. As noted, we focused on our two primary market sectors, aviation and building efficiency, and also looked at ancillary sectors. The model confirmed our contention that the provision of energy efficiency products will remain an essential tool for INDC and customer sector attainment of 2050 climate change objectives.</p>

C4. Targets and performance

C4.1

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

Absolute target

C4.1a

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

Target reference number

Abs 1

Scope

Scope 1+2 (location-based)

% emissions in Scope

100

% reduction from base year

15

Base year

2015

Start year

2016

Base year emissions covered by target (metric tons CO2e)

2036941

Target year

2020

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

% achieved (emissions)

60

Target status

Underway

Please explain

UTC's 2015 Scope 1 + Scope 2 emissions baseline = 2,036,941 mtCO2e UTC's 2020 Scope 1 + Scope 2 absolute emissions reduction target = 15% from baseline 2020 Absolute target reduction total = 305,541 mtCO2e UTC 2017 Scope 1 + Scope 2 emissions = 1,856,387 mtCo2e 2017 CO2e change vs. 2015 baseline = - 180,554 mtCO2e % change 2017 vs. baseline = -180,554/2,036,941 = -9% 2017 progress towards 2020 goal = -9%/-15% = 60% UTC uses "straightline" annual targetting, so each year in the five year goal period should reduce 3% for a total of 15% by 2020. For 2017, we should be at least 40% of our way to the 2020 goal. At 60%, we are ahead of schedule.

Target reference number

Abs 2

Scope

Scope 3: Business travel

% emissions in Scope

100

% reduction from base year

15

Base year

2015

Start year

2016

Base year emissions covered by target (metric tons CO2e)

109891

Target year

2020

Is this a science-based target?

Yes, we consider this a science-based target, but this target has not been approved as science-based by the Science-Based Targets initiative

% achieved (emissions)

40

Target status

Underway

Please explain

UTC's Scope 3 business travel emissions baseline = 109,891 mtCO2e UTC's 2020 Scope 3 business travel absolute emissions reduction target = 15% from baseline 2020 Absolute target reduction total = 16,484 mtCO2e UTC 2017 Scope 3 business travel emissions = 103,540 mtCo2e 2017 CO2e change vs. 2015 baseline = - 6,351 mtCO2e % change 2017 vs. baseline = $-6,351/109,891 = -6\%$ 2017 progress towards 2020 goal = $-6\%/-15\% = 40\%$ UTC uses "straightline" annual targetting, so each year in the five year goal period should reduce 3% for a total of 15% by 2020. For 2017, we should be at least 40% of our way to the 2020 goal. At 40%, we are on schedule.

C4.2

(C4.2) Provide details of other key climate-related targets not already reported in question C4.1/a/b.

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 projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	557	131442
To be implemented*	154	36606
Implementation commenced*	630	36460
Implemented*	352	37818
Not to be implemented	310	59803

C4.3b

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

Activity type

Energy efficiency: Processes

Description of activity

Other, please specify (All of the above)

Estimated annual CO2e savings (metric tonnes CO2e)

28364

Scope

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency – as specified in CC0.4)

4050000

Investment required (unit currency – as specified in CC0.4)

18750

Payback period

4 - 10 years

Estimated lifetime of the initiative

6-10 years

Comment

UTC employed a wide variety of energy efficiency improvement technologies in over 195 projects in our factories, including optimizing the efficiency of our compressed air, heating and cooling and lighting systems, all of which reduced the amount of electricity we need to purchase.

Activity type

Process emissions reductions

Description of activity

New equipment

Estimated annual CO2e savings (metric tonnes CO2e)

9455

Scope

Scope 1

Voluntary/Mandatory

Voluntary

Annual monetary savings (unit currency - as specified in CC0.4)

1350000

Investment required (unit currency - as specified in CC0.4)

6250000

Payback period

4 - 10 years

Estimated lifetime of the initiative

6-10 years

Comment

UTC employed a wide variety of equipment replacement and modification investments in over 150 projects in our factories, including optimizing the use of natural gas used to make carbon brake discs for commercial landing gear/braking systems and minimizing refrigerant losses incurred in the charging of refrigeration and other climate control products.

C4.3c

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

Method	Comment
Dedicated budget for energy efficiency	UTC's annual 3% absolute GHG emissions reduction requirement and potential financially competitive savings from energy efficiency projects provides incentives for site investments in GHG reductions. In our experience, energy efficiency related reduction opportunities provide the best business case for reducing the greatest amount of emissions.

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

Product

Description of product/Group of products

Pratt & Whitney estimates that use of the 8,500 GTF engines sold during 2015 and 2017 will result in avoided emissions totaling 160 million metric tonnes CO₂ by 2025. Carrier maintains a "CO₂nservation Meter", which depicts in real time accumulated emissions reductions since 2000 from the use of Carrier energy efficient chillers and refrigeration units.

The calculations are 3rd party audited and verified by an ISO certified verifier, and as of the end of 2017, Carrier estimated that over 150 million mtCO₂e had been avoided through the use of Carrier products

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

Avoided emissions

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

Other, please specify (UTC company methodology)

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

Comment

UTC does not publically report sales revenue from individual products or general product classes. Revenue from both the P&W GTF engine and Carrier lower emitting refrigeration products represent material percentages of company revenue.

C5. Emissions methodology

C5.1

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

Scope 1

Base year start

January 1 2015

Base year end

December 31 2015

Base year emissions (metric tons CO2e)

850329

Comment

Scope 2 (location-based)

Base year start

January 1 2015

Base year end

December 31 2015

Base year emissions (metric tons CO2e)

1186612

Comment

Scope 2 (market-based)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.2

(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions.

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

C6. Emissions data

C6.1

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

Row 1

Gross global Scope 1 emissions (metric tons CO2e)

785316

End-year of reporting period

<Field Hidden>

Comment

Row 2

Gross global Scope 1 emissions (metric tons CO2e)

<Field Hidden>

End-year of reporting period

<Field Hidden>

Comment

<Field Hidden>

Row 3

Gross global Scope 1 emissions (metric tons CO2e)

<Field Hidden>

End-year of reporting period

<Field Hidden>

Comment

<Field Hidden>

Row 4

Gross global Scope 1 emissions (metric tons CO2e)

<Field Hidden>

End-year of reporting period

<Field Hidden>

Comment

<Field Hidden>

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 have operations where we are able to access electricity supplier emission factors or residual emissions factors, but are unable to report a Scope 2, market-based figure

Comment

UTC does not support the use of market based emissions reporting. We have reviewed the concepts used with numerous academic and other organizations and believe it misrepresents the reporting, interpretation and understanding of corporate physical impacts on the environment.

C6.3

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

Row 1

Scope 2, location-based

1071071

Scope 2, market-based (if applicable)

<Field Hidden>

End-year of reporting period

<Field Hidden>

Comment

Row 2

Scope 2, location-based

<Field Hidden>

Scope 2, market-based (if applicable)

<Field Hidden>

End-year of reporting period

<Field Hidden>

Comment

<Field Hidden>

Row 3

Scope 2, location-based

<Field Hidden>

Scope 2, market-based (if applicable)

<Field Hidden>

End-year of reporting period

<Field Hidden>

Comment

<Field Hidden>

Row 4

Scope 2, location-based

<Field Hidden>

Scope 2, market-based (if applicable)

<Field Hidden>

End-year of reporting period

<Field Hidden>

Comment

<Field Hidden>

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 Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status

Relevant, calculated

Metric tonnes CO2e

15780800

Emissions calculation methodology

UTC has over 25,000 suppliers, and the vast majority do not have the ability to report total or UTC-related GHG emissions generated during the course of supplying UTC. Our suppliers work within four distinctly different industrial

manufacturing sectors (jet engines, refrigeration, fire and security, and elevators/escalators) and we do not believe that extrapolating representative suppliers, if available, would lead to a balanced Scope 3 profile. Instead, UTC employed the Carnegie Mellon EIO-LCA Tool (www.eiolca.net) to estimate supplier GHG emissions from each of the four sectors. The EIO-LCA tool uses econometric and GHG input/output models to estimate GHG emissions for over 490 industrial sectors. For every \$1million in product sold from a sector, the tool estimates GHGs associated with the sectors involved in the production of raw materials, product feedstock and other inputs needed for the production of products within the sector. - 2017 sales for each UTC business unit were used as inputs to the BU's NAICS sector code, which then generated the total estimated GHG emissions from raw material extraction to finished product ready to ship at the UTC factory gate - Since UTC has Scope 1 and 2 GHG emissions from our operations, we deducted those from the EIO-LCA tool estimates to produce Upstream Scope 3 supply chain emissions. The Carnegie Mellon model output for our individual business unit/sectors and UTC in summary is attached below as UTC 2017 Scope 3 Emissions. Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

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

0

Explanation

Modeled data with no input from suppliers Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Capital goods

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

0

Emissions calculation methodology

Capital goods are not called out as a separate Scope 3 source in the Carnegie Mellon model, and any impacts are included in Purchased Goods and services Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

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

0

Explanation

Modeled data with no input from suppliers Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

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

Evaluation status

Not relevant, calculated

Metric tonnes CO₂e

12537100

Emissions calculation methodology

The Carnegie Mellon EIO LCA model estimates supplier fuel and energy related activities associated with supply of UTC materials and products, including GHG emissions associated with impacts from Power Generation and Supply, Oil and Gas Extraction, Coal Mining and petroleum refining for energy used by suppliers working on UTC's behalf

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

0

Explanation

Modeled data with no input from suppliers Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus

our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Upstream transportation and distribution

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

1373500

Emissions calculation methodology

The Carnegie Mellon EIO LCA model estimates supplier truck and air transportation related activities associated with supply of UTC materials and products

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

0

Explanation

Modeled data with no input from suppliers Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Waste generated in operations

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

308600

Emissions calculation methodology

The Carnegie Mellon EIO LCA model estimates waste related CO2e emissions for the supply and processing of UTC materials and products.

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

0

Explanation

Modeled data with no input from suppliers Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Business travel

Evaluation status

Relevant, calculated

Metric tonnes CO2e

103540

Emissions calculation methodology

UTC directly measures fuel use in company vehicles and air craft, and receives non-company owned aircraft travel emissions from our American Express travel services provider. We receive similar vehicle miles traveled and associated vehicle CO2 emissions from our various rental car service providers.

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

100

Explanation

UTC directly measures fuel use in company vehicles and air craft, and receives non-company owned aircraft travel emissions from our American Express travel services provider. We receive similar vehicle miles traveled and associated vehicle CO2 emissions from our various rental car service providers. Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Employee commuting

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

No calculation or modeling done

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

0

Explanation

No calculation or modeling done Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Upstream leased assets**Evaluation status**

Not relevant, explanation provided

Metric tonnes CO₂e

0

Emissions calculation methodology

Carnegie Mellon EIO LCA Browse US 2002 (428 sector) Producer Model, does not uniquely identify supplier upstream leased asset emissions. These impacts are believed to not be relevant, and are included in the Purchased Goods and Services estimate

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

0

Explanation

No calculation or modeling done Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Downstream transportation and distribution**Evaluation status**

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

No calculation or modeling done

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

0

Explanation

No calculation or modeling done Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

UTC does not sell products that undergo subsequent processing once they leave our manufacturing facilities

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

0

Explanation

No calculation or modeling done Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Use of sold products

Evaluation status

Relevant, calculated

Metric tonnes CO2e

370000000

Emissions calculation methodology

Total represents P&W engine and Carrier product emissions analysis conducted by UT Research. Both used a market share approach. UN IPCC AR 5 2012 sector emissions for aviation and buildings were used as the starting point, and P&W and Carrier verified % total sector market share was applied to total sector emissions. A screening assessment of emissions associated with product use of other UTC products was conducted and determined those to be non-material (<5% total product use emissions). Consequently these product emissions were not included in Use of Sold Products total.

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

0

Explanation

No data from suppliers used in determining product emissions impacts Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

End of life treatment of sold products**Evaluation status**

Not relevant, calculated

Metric tonnes CO2e

0

Emissions calculation methodology

UTC sells tens of thousands of unique products, ranging from software to jet engines and large office complex refrigeration plants. Several of our largest and most complex products have operating life spans in excess of 30 years, and during that period may undergo the replacement of parts but not end of life processing. Other products, such as smoke detectors and home fire extinguishers have shorter active lives (3-10 years) and at the end their useful service may be wholly or partially recycled or occasionally thrown away. The number and array of our products, and the varying

complexity of their ongoing operational maintenance, repair and ultimate retirement make the calculation of end of life treatment GHG emissions so uncertain an estimate as to be unusable.

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

0

Explanation

No calculation or modeling done Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Metric tonnes CO₂e

0

Emissions calculation methodology

UTC has no material downstream leased assets per the Corporate Value Chain (Scope 3) Accounting and Reporting Standard

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

0

Explanation

No calculation or modeling done Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

UTC has no franchises or franchise relationships

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

0

Explanation

No calculation or modeling done Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Investments**Evaluation status**

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

UTC does not directly invest nor are we a financial organization and has no reportable associated emissions, per the Corporate Value Chain (Scope 3) Accounting and Reporting Standard

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

0

Explanation

No calculation or modeling done Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Other (upstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

UTC has no upstream impacts not included in the Scope 3 sources above not included in Scope 3 items above

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

0

Explanation

No calculation or modeling done Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

Other (downstream)**Evaluation status**

Not relevant, explanation provided

Metric tonnes CO2e

0

Emissions calculation methodology

UTC has no downstream impacts not included in the Scope 3 sources above

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

0

Explanation

No calculation or modeling done Relevance Assessment - UTC used the Carnegie Mellon model to develop estimated emissions data for those Scope 3 impacts for which we did not have direct emissions information. Combining the Carnegie Mellon estimated emissions data with our measured Scope 1, 2 and Scope 3 business travel emissions, plus our measured data on Scope 3 use of UTC products, we developed a full life cycle emissions estimate for our entire enterprise. From this we identified three primary emission sources that represent more than 95% of our enterprise total, and which believe to be relevant for our program: Scope 1 and 2 and Scope 3 business travel Purchased goods and services Use of sold products

C6.7

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

No

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

0.000031

Metric numerator (Gross global combined Scope 1 and 2 emissions)

1856387

Metric denominator

unit total revenue

Metric denominator: Unit total

60200000000

Scope 2 figure used

Location-based

% change from previous year

3

Direction of change

Decreased

Reason for change

UTC's absolute Scope 1 and Scope 2 GHG emissions decreased 3% 2017 vs 2016, and the intensity values for those years demonstrated the same level of progress. Our success in decreasing emissions and improving our intensity values was directly associated with the over 350 energy efficiency and GHG emissions reduction projects implemented at our facilities.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization have greenhouse gas emissions other than carbon dioxide?

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	751774	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	1	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	752	IPCC Fifth Assessment Report (AR5 – 100 year)
HFCs	32778	IPCC Fifth Assessment Report (AR5 – 100 year)
SF6	11	IPCC Fifth Assessment Report (AR5 – 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	455015
Africa	196
Asia, Australasia	160626
Europe	108131
South America	496
Other, please specify (Canada and Mexico)	62514

C7.3

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

By activity

C7.3c

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

Activity	Scope 1 emissions (metric tons CO2e)
Factory and operations	785316

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 in market-based approach (MWh)
United States of America	616166		1321893	9333
Other, please specify (Rest of World)	454905		986589	

C7.6

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

By activity

C7.6c

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

Activity	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Factory and operations	1071071	

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	0	No change	0	No change vs 2016
Other emissions reduction activities	37818	Decreased	2	UTC's Scope 1 and Scope 2 emission reduction projects completed during 2017 reduced our absolute Scope 1 and Scope 2 GHG emissions by 37,818 mtCO2e. Our Scope 1 + Scope 2 emissions in 2016 were 1,863,988 mtCO2e. The 37,818 mtCO2e reduction in 2017 due to emissions reduction activities represents a 2% reduction ($37,818/1,863,988 = 2\%$)
Divestment	0	No change	0	No change vs 2016
Acquisitions	0	No change	0	No change vs 2016
Mergers	0	No change	0	No change vs 2016
Change in output	30217	Increased	3	UTC's 2017 growth in factory output resulted in an increase of 30,217 mtCO2e to our absolute Scope 1 and Scope 2 GHG emissions through the purchase of additional energy, consumption of fuel and use of GHG emitting chemicals in our operations, in response to increasing operations. Total 2016 Scope 1 and Scope 2 CO2e was 1,863,988, so the additional operational related increase of 30,217 represents a 2% increased impact ($30,217/1,863,988 = 2\%$)
Change in methodology	0	No change	0	No change vs 2016
Change in boundary	0	No change	0	No change vs 2016
Change in physical operating conditions	0	No change	0	No change vs 2016
Unidentified	0	No change	0	No change vs 2016
Other	0	No change	0	No change vs 2016

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?

Location-based

C8. Energy

C8.1

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

More than 5% but less than or equal to 10%

C8.2

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

	Indicate whether your organization undertakes this energy-related activity
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	Yes
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	2934881	2934881
Consumption of purchased or acquired electricity	<Field Hidden>	0	2282408	2282408
Consumption of purchased or acquired heat	<Field Hidden>	<Field Hidden>	<Field Hidden>	<Field Hidden>
Consumption of purchased or acquired steam	<Field Hidden>	0	29356	29356

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of purchased or acquired cooling	<Field Hidden>	0	0	0
Consumption of self-generated non-fuel renewable energy	<Field Hidden>	9333	<Field Hidden>	9333
Total energy consumption	<Field Hidden>	9333	5246645	5255978

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	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	Yes
Consumption of fuel for co-generation or tri-generation	Yes

C8.2c

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

Fuels (excluding feedstocks)

Aviation Gasoline

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

711463

MWh fuel consumed for the self-generation of electricity

223000

MWh fuel consumed for self-generation of heat

2000418

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling

MWh fuel consumed for self-cogeneration or self-trigeneration

C8.2d

(C8.2d) List the average emission factors of the fuels reported in C8.2c.

Acetylene

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Agricultural Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Alternative Kiln Fuel (Wastes)

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Animal Fat

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Animal/Bone Meal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Anthracite Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Asphalt

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Aviation Gasoline

Emission factor

95.7

Unit

kg CO2e per million Btu

Emission factor source

USEPA

Comment

Bagasse

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Bamboo

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Basic Oxygen Furnace Gas (LD Gas)

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Biodiesel

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Biodiesel Tallow

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Biodiesel Waste Cooking Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Bioethanol

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Biogas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Biogasoline

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Biomass Municipal Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Biomethane**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Bitumen**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Bituminous Coal**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Black Liquor**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Blast Furnace Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Brown Coal Briquettes (BKB)

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Burning Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Butane

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Butylene

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Charcoal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Coal Tar**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Coke**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Coke Oven Gas**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Coking Coal**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Compressed Natural Gas (CNG)

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Condensate

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Crude Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Crude Oil Extra Heavy

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Crude Oil Heavy

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Crude Oil Light

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Diesel

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Distillate Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Dried Sewage Sludge

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Ethane

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Ethylene

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Fuel Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Fuel Oil Number 1

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Fuel Oil Number 2

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Fuel Oil Number 4

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Fuel Oil Number 5

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Fuel Oil Number 6

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Gas Coke

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Gas Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Gas Works Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

GCI Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

General Municipal Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Grass

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Hardwood

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Heavy Gas Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Hydrogen

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Industrial Wastes

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Isobutane

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Isobutylene

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Jet Gasoline**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Jet Kerosene**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Kerosene**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Landfill Gas**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Light Distillate

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Lignite Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Liquefied Natural Gas (LNG)

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Liquefied Petroleum Gas (LPG)

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Liquid Biofuel

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Lubricants

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Marine Fuel Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Marine Gas Oil
Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Metallurgical Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Methane

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Motor Gasoline

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Naphtha

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Natural Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Natural Gas Liquids (NGL)

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Natural Gasoline

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Non-Biomass Municipal Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Non-Biomass Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Oil Sands

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Oil Shale**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Orimulsion**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Other Petroleum Gas**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Paraffin Waxes**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Patent Fuel

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

PCI Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Peat

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Pentanes Plus

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Petrochemical Feedstocks

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Petrol

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Petroleum Coke

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Petroleum Products

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Pitch

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Plastics

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Primary Solid Biomass

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Propane Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Propane Liquid

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Propylene

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Refinery Feedstocks

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Refinery Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Refinery Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Residual Fuel Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Road Oil**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

SBP**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Shale Oil**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Sludge Gas**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Softwood

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Solid Biomass Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Special Naphtha

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Still Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Straw

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Subbituminous Coal

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Sulphite Lyes

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Tar**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Tar Sands**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Thermal Coal**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Thermal Coal Commercial**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Thermal Coal Domestic

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Thermal Coal Industrial

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Tires

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Town Gas

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Unfinished Oils

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Vegetable Oil

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Waste Oils

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Waste Paper and Card**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Waste Plastics**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Waste Tires**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

White Spirit**Emission factor**

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Wood

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Wood Chips

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Wood Logs

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Wood Pellets

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Wood Waste

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

Other

Emission factor

<Field Hidden>

Unit

<Field Hidden>

Emission factor source

<Field Hidden>

Comment

<Field Hidden>

C8.2e

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

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	223000	223000	9333	0

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Heat	2000418	2000418	0	0
Steam				
Cooling				

C8.2f

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

C9. Additional metrics

C9.1

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

C-T09.6/C-TS9.6

(C-T09.6/C-TS9.6) What is your investment in research and development (R&D), equipment, products and services and which part of it would you consider a direct investment in the low-carbon transition?

Activity

Aviation

Investment start date

January 1 2007

Investment end date

December 31 2017

Investment area

R&D

Technology area

Other, please specify (jet engine, aerospace components)

Investment maturity

Applied research and development

Investment figure

10000000000

Low-carbon investment percentage

41-60%

Please explain

UTC spent approximately \$10 billion in developing the Geared Turbofan jet engine. The engine is 16% more fuel efficient (and emits 16% less CO2e) when compared to other engines on the commercial market.

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 and/or Scope 2 emissions and attach the relevant statements.

Scope

Scope 1

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Underway but not complete for reporting year-previous statement of process attached

Type of verification or assurance

Limited assurance

Attach the statement

[UTC 2016 CDP Verification Statement Final.pdf](#)

Page/ section reference

Pages 1-4

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

100

Scope

Scope 2 location-based

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Underway but not complete for reporting year-previous statement of process attached

Type of verification or assurance

Limited assurance

Attach the statement

[UTC 2016 CDP Verification Statement Final.pdf](#)

Page/ section reference

Pages 1-4

Relevant standard

ISO14064-3

Proportion of reported emissions verified (%)

C10.1b

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

Scope

Scope 3- at least one applicable category

Verification or assurance cycle in place

Annual process

Status in the current reporting year

Underway but not complete for reporting year – previous statement of process attached

Attach the statement

[UTC 2016 CDP Verification Statement Final.pdf](#)

Page/section reference

Pages 1 - 4

Relevant standard

ISO14064-3

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?

No, we do not verify any other climate-related information reported in our CDP disclosure

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

RGGI

Other carbon tax, please specify (UK Energy Efficiency Scheme)

C11.1b

(C11.1b) Complete the following table for each of the emissions trading systems in which you participate.

Alberta SGER

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Australia ERF Safeguard Mechanism

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

BC GGIRCA

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Beijing pilot ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

California CaT

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

China national ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Chongqing pilot ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

EU ETS

% of Scope 1 emissions covered by the ETS

1

Period start date

January 1 2017

Period end date

December 31 2017

Allowances allocated

0

Allowances purchased

180

Verified emissions in metric tons CO2e

180

Details of ownership

Other, please specify (corporate owned aircraft)

Comment

Fujian pilot ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Guangdong pilot ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Hubei pilot ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Kazakhstan ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Korea ETS**% of Scope 1 emissions covered by the ETS**

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Massachusetts state ETS**% of Scope 1 emissions covered by the ETS**

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

New Zealand ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Ontario CaT

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Québec CaT**% of Scope 1 emissions covered by the ETS**

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

RGGI**% of Scope 1 emissions covered by the ETS**

1

Period start date

January 1 2017

Period end date

December 31 2017

Allowances allocated

2300

Allowances purchased

0

Verified emissions in metric tons CO2e

2300

Details of ownership

Facilities we own and operate

Comment

RGGI allowances allocated for free to two UTC facilities under the RGGI cogeneration unit allowance allocation formula

Saitama ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Shanghai pilot ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Shenzhen pilot ETS**% of Scope 1 emissions covered by the ETS**

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Switzerland ETS**% of Scope 1 emissions covered by the ETS**

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Tianjin pilot ETS

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Tokyo CaT

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Washington CAR

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

Other ETS, please specify

% of Scope 1 emissions covered by the ETS

<Field Hidden>

Period start date

<Field Hidden>

Period end date

<Field Hidden>

Allowances allocated

<Field Hidden>

Allowances purchased

<Field Hidden>

Verified emissions in metric tons CO2e

<Field Hidden>

Details of ownership

<Field Hidden>

Comment

<Field Hidden>

C11.1c

(C11.1c) Complete the following table for each of the tax systems in which you participate.

Alberta carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

BC carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Chile carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Colombia carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Denmark carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Estonia carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Finland carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

France carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Iceland carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Ireland carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Japan carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Latvia carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Liechtenstein carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Mexico carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Norway carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Poland carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Portugal carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Slovenia carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

South Africa carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Sweden carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Switzerland carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

UK carbon price floor

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Ukraine carbon tax

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Other carbon tax, please specify

Period start date

April 1 2016

Period end date

March 31 2017

% of emissions covered by tax

1

Total cost of tax paid

630000

Comment

CRC allowance charges for 27,911 mtCO₂e associated with electricity use and natural gas used for heating at 60 UTC sites located in the United Kingdom

Other carbon tax, please specify

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Other carbon tax, please specify

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Other carbon tax, please specify

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Other carbon tax, please specify

Period start date

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

Other carbon tax, please specify**Period start date**

<Field Hidden>

Period end date

<Field Hidden>

% of emissions covered by tax

<Field Hidden>

Total cost of tax paid

<Field Hidden>

Comment

<Field Hidden>

C11.1d

(C11.1d) What is your strategy for complying with the systems in which you participate or anticipate participating?

UTC assures compliance with all emissions trading schemes through quarterly collection of energy and GHG emissions data from all reporting sites. These data are quality assured by UTC, undergo 3rd party verification as part of our Scope 1 and Scope 2 data verification process, and included in all reporting as specified by each of the trading schemes in which we participate.

Overall emissions costs are reduced through our mandatory annual 3% reduction in GHG emissions, which reduces emissions and the need for associated allowances.

In addition to regulatory compliance with regulated carbon price systems, UTC also uses the cost of the regulated emission allowances as rationale when planning CO2e emissions reduction goals and projects with our UK sites directly affected by the CRC Energy Efficiency scheme carbon allowance price. The cost of carbon combines with the reduction in energy costs associated with the projects to improve the financial return on investment for reduction projects, making them more likely to receive management approval and funding.

C11.2

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

No

C11.3

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

Yes

C11.3a

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

Objective for implementing an internal carbon price

Change internal behavior

Drive energy efficiency

GHG Scope

Scope 1

Scope 2

Scope 3

Application

UTC uses the actual price of carbon we have been charged in the United Kingdom when considering the potential value of energy efficiency and GHG reduction projects and process changes. Additionally, our Pratt & Whitney business unit uses a carbon shadow price as part of its assessment of potential emissions efficiency and reduction projects under the P&W Sustainable ROI initiative. Sustainable ROI includes actual and direct costs along with applicable externalities, such

as a Social Cost of Carbon to provide an ROI calculation reflecting both types of inputs and which is used in capital funding decisions.

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

22.5

Variance of price(s) used

\$10 - \$22.5

Type of internal carbon price

Shadow price

Impact & implication

To date, the impact of our actual carbon fees and shadow prices has had limited impact on energy efficiency project and other GHG reduction project investments. UTC has found that the cost of carbon that might be eliminated through these projects provides limited value when compared with the significant cost savings we often find in GHG emission reduction projects. While providing a limited benefit in project financial analyses, the inclusion of carbon prices in deliberations socializes to management the idea of carbon as a tangible future cost and provides continued messaging that climate change mitigation remains a UTC sustainability goal and business objective.

C12. Engagement

C12.1

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

Yes, our suppliers

Yes, our customers

C12.1a

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

Type of engagement

Compliance & onboarding

Details of engagement

Code of conduct featuring climate change KPIs

Climate change is integrated into supplier evaluation processes

% of suppliers by number

100

% total procurement spend (direct and indirect)

100

% Scope 3 emissions as reported in C6.5

8

Rationale for the coverage of your engagement

Through the modeling of our overall Scope 3 emissions (defined in C6.5), UTC estimates that our over 25,000 suppliers working on our behalf emit 15 times our own Scope 1, 2 and Scope 3 business travel emissions. While significant, this estimated 30 million mtCO₂e from our suppliers represents 8% of the UTC total, which is dominated by an estimated 370 million mtCO₂e from our product use emissions. To help minimize our supply chain climate change impacts, UTC engages with through our suppliers requirements document, that defines the expectation that all UTC suppliers will strive to be responsible stewards of the environment, and reduce costs through efficient use of resources, including energy. UTC's corporate environment group has developed and presented webinars and other presentations to suppliers, identifying best energy efficiency and GHG reduction practices for them to consider in their operations. We have also included representatives of the US Department of Energy Better Plants program in these technical presentations, and promoted supplier participation in the DoE Better Plants program as a means of reducing GHG emissions and qualifying for UTC Supplier Gold

Impact of engagement, including measures of success

The impacts of these engagements has been largely anecdotally assessed, and UTC does not track GHG emission reductions or energy efficiency improvements associated with our engagement with suppliers.

Comment

C12.1b

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

Type of engagement

Education/information sharing

Details of engagement

Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services

Size of engagement

95

% Scope 3 emissions as reported in C6.5

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

Use of UTC products represents 92% of our overall CO₂e value chain footprint. Two types of products - Carrier chillers and air conditioning equipment and Pratt & Whitney jet engines are responsible for 98% of our total product use emissions. Refrigeration equipment and jet engines consume significant electricity and jet fuel, respectively, for their operation which in turn contributes to product use emissions. Both product markets are driven by technology quality and innovation, product reliability, cost of operation and, to a lesser extent, demonstration of a superior product use climate-impact footprint. Our Carrier and Pratt & Whitney product marketing and customer outreach emphasizes the superior performance of our products across all of these market dimensions. When comparing the cost of operation for a Carrier chiller or Pratt engine, the lower energy use of both in comparison to competitors is a central selling point. The more efficient use of energy and associated climate change benefits are always discussed in detail in all Carrier and P&W marketing activities, including technical specifications, customer presentations and final performance agreements.

Impact of engagement, including measures of success

UTC assesses the extent to which our product climate-related benefits contribute to sales and revenue success. Pratt & Whitney estimates that use of the 8,000 GTF engines sold during 2015 and 2016 will result in avoided emissions totaling 160 million metric tonnes CO₂ by 2025. Carrier maintains a "CO₂nservation Meter", which depicts in real time accumulated emissions reductions since 2000 from the use of Carrier energy efficient chillers and refrigeration units. The site can be visited at <http://www.carrier.com/carrier/en/us/sustainability/>. At the end of 2017, the use of Carrier products when compared to peer alternatives resulted in the avoidance of over 200 million mtCO₂e.

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

Other

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	<p>Supporting member of EuroACE and European Network of Green Building Councils building energy efficiency organizations, advocating for adoption of the European Energy Efficiency Directive (30% efficiency improvement by 2030). UTC Government Affairs professionals advocate directly to state and national legislators and regulators in the US and EU to recommend and support building energy efficiency legislation and regulation. Engagement includes advocacy for increased energy efficiency building performance standardization, public sector purchase of energy efficient buildings and equipment, and tax and R&D incentives promoting greater development and adoption of energy efficient technology. UTC also sponsor US-based Alliance to Save Energy, Global Building Performance Network and India-based TERI-UTC Center for Energy Efficient buildings. These organizations engage directly with national policy makers on building energy efficiency issues.</p>	<p>In the European Union, proposed expansions to the EU Energy Efficiency and Buildings directives requires EU countries to adopt binding legislation that expands several initiatives, including national energy efficiency improvement by 2030, increased public sector purchasing of energy efficient buildings, products and services, and a program of mandatory corporate site energy audits that includes investment in manufacturing facility energy saving projects and practices. In the United States, various state legislative proposals support expanded use of LEED and other sustainable building certification standards, energy efficient building performance data collection and reporting, and the elimination of high global warming potential refrigerants used in commercial refrigeration equipment. In New York City, the proposed solution is a 30% reduction in commercial building energy use by 2025.</p>
Other, please specify (Global aviation emissions reduction)	Support with minor exceptions	<p>Pratt & Whitney engineers regularly provide expert testimony and public commentary in response to jet engine emissions reduction programs and regulations as proposed by the United Nation's International Civil Aviation Organization (ICAO), USEPA and European Union regulators. Pratt & Whitney personnel serve on industry workgroups that engage directly with policy makers on the reduction of aviation GHG emissions, including: the International Air Transport Authority, Environment Committee, and the Air Transport Action Group (ATAG).</p>	<p>The UN's International Civil Aviation Organization (ICAO) has been charged with developing a global regulatory regime that will reduce commercial aviation CO2 emissions in keeping with UN and COP 21 targets limiting average global temperature increases to no more than 2 degrees C by 2100. In 2016, the ICAO program was approved, and focuses on meeting three objectives: 1.5% annual fuel efficiency improvements until 2020; carbon neutrality from 2020 forward; and 50% reduction in global aviation CO2 absolute emissions by 2050 vs. 2005. The program must now be adopted by ICAO member countries and airlines, and UTC Pratt & Whitney engineers and government affairs personnel will continue their engagement at the member country level.</p>
Other, please specify (Refrigerants)	Support with minor exceptions	<p>UTC's Carrier business unit was an active participant in the development of the European Union F-Gas regulations, that went into effect in January 2015. Company refrigerant and regulatory affairs experts provided technical expertise to EU regulators developing the F-Gas rule. In 2016, significant outreach was made to EU regulators to explain the benefits of Carrier's PUREtec, HFO-1234z(E), low GWP cooling and heating technology. In Europe, Carrier is striving to develop products that use refrigerants with GWP values under 150. Carrier is also</p>	<p>The EU F-Gas regulation will drive a phasedown in the use of HFCs, increase the use of CO2 and other low-GWP refrigerants and reduce EU refrigerant Global Warming Potential from an average of 2000 to 400 by 2030. In 2016, the "Kigali" amendment to the Montreal Protocol amendment was ratified and defined the global phasedown of production and consumption of HFCs to a small fraction of historical production by 2045. The Montreal Protocol requires signatory countries to adopt its provisions, and UTC government affairs</p>

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
		<p>a key player in a US White House sponsored refrigerant improvement initiative that partners the USEPA with refrigerant manufacturers and users to reduce the global warming impact of these GHGs. As part of this initiative, Carrier committed in 2014 to develop HFC free road transport refrigeration alternatives by 2020, and has begun selling a CO2 based transportation refrigeration system. Carrier is also an active industry participant in the USEPA Significant New Alternatives Policy (SNAP) Program, that focuses on the identification and regulatory approval of climate-friendly refrigerant chemicals. UTC EU government affairs works directly with the European Partnership for Energy and the Environment in that organization's advocacy for EU HVAC efficiency standards.</p>	<p>continues to engage with national regulatory bodies to encourage them to implement the Kigali Amendment provisions.</p>

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

US Green Building Council

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Support for greater building energy efficiency, as measured by a transparent and credible process, including LEED certification, will result in a significant GHG emissions reductions from a source of 35% of the world's anthropogenic GHG emissions. LEED and other replicable building design and performance standards allow owners and tenants to clearly understand and measure the performance of their buildings and to assess the economic and environmental benefits that Green building provides. LEED standardization allow investors to clearly understand the return on investment of beneficial practices, and consequently provide greater support for their adoption.

How have you, or are you attempting to, influence the position?

UTC supports the organization's core messages and programs through participation on the USGBC board, member deliberations and forums designed to develop organizational positions. UTC's Carrier business unit promotes LEED and Green building practice adoption through support of legislation advocating the adoption of LEED building standards, educational and thought leadership activities, including hosting Green building seminars for building professionals in developing countries, and the training of LEED certification building professionals through the Carrier University LEED professional training curriculum.

Trade association

Air Transport Action Group

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Air Transport Action Group (ATAG) is an aviation trade association that advocates for the adoption of a global, three part global aviation GHG emissions program that includes: 1.5% average annual fuel efficiency improvement from 2009 to 2020, stabilization of net aviation CO2 emissions at 2020 levels through carbon neutral growth, and a reduction of aviation net CO2 emissions to 50% of 2005 by 2050. These goals are included in the International Civil Aviation Organization (ICAO) program to control global aviation emissions, as approved and recognized by the UN Intergovernmental Panel on Climate Change during 2016.

How have you, or are you attempting to, influence the position?

UTC's Pratt & Whitney business unit is a participating sponsor of ATAG, holds a seat on its Board of Directors, and provides technical expertise to the group in the development of its positions.

Trade association

Global Food Cold Chain Council

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Global Food Cold Chain Council convenes refrigeration system manufacturers, food suppliers, ocean and road transportation providers and food retailers to accelerate the transition to energy efficient transportation and stationary refrigeration systems using lower global warming refrigerants. The initiative also works with partners in the US based CCAC (Climate and Clean Air Coalition) to develop and implement broad-based public and private sector collaborative solutions to reduce hydrofluorocarbon (HFC) emissions in the cold food chain across developed and developing countries. The council works with individual businesses, associations, governments, and civil society. The food cold

chain is responsible for nearly one third of global HFC emissions. The GFCCC is part of the Alliance's comprehensive approach to achieving the global reduction

How have you, or are you attempting to, influence the position?

UTC's Carrier business unit is a founding member of the Council, and our Chief Sustainability Officer is on its leadership board. Carrier scientists serve in a technical advisory capacity to provide technical information on the role of refrigerant chemicals in global food chain refrigeration, and the benefits of increased energy efficiency and lower HFC chemical use across the food cold chain. An example of a UTC sponsored study by the GFCCC is attached under "Global Food Waste Climate Change impact".

Trade association

Commercial Aviation Alternative Fuels Initiative

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Commercial Aviation Alternative Fuels Initiative (CAAFI) is a coalition of aerospace manufacturers and service providers seeking to enhance US energy security and greater sustainability for aviation through the use of alternative jet engine fuels. CAAFI participants collaborate on technical aspects of alternative fuel chemistry and production capacity, and have developed various tools that facilitate the use of alternative fuels and demonstrate the viability of alternative fuels to regulators and legislators developing alternative fuel regulations and policy.

How have you, or are you attempting to, influence the position?

UTC's Pratt &Whitney technical experts serve on a variety of CAAFI workgroups to provide input to CAAFI studies, working papers and public testimony

Trade association

American Council for an Energy Efficient Economy (ACEEE)

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), a nonprofit, 501(c)(3) organization, acts as a catalyst to advance energy efficiency policies, programs, technologies, investments, and behaviors. We believe that the United States can harness the full potential of energy efficiency to achieve greater economic prosperity, energy security, and environmental protection for all its people. ACEEE carries out its mission by: •Conducting in -depth technical and policy

analyses •Advising policymakers and program managers •Working collaboratively with businesses, government officials, public interest groups, and other organizations

How have you, or are you attempting to, influence the position?

UTC maintains a board seat and financial sponsorship of ACEEE, and as such directly participates in the organization's program development and advocacy

C12.3d

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

Yes

C12.3e

(C12.3e) Provide details of the other engagement activities that you undertake.

UTC is a member of the US Department of Energy (DoE) Better Plants Program.

Method of Engagement - The program requires UTC to establish operating facility energy reduction targets, assign a designated liaison between UTC and the DoE, and participate in program meetings and conference calls. The liaison also manages direct interaction between DoE personnel and UTC sites and suppliers working on energy efficiency projects.

Topic of Engagement - The Better Plants Program provides direct technical expertise resulting in energy efficiency improvements at participating member manufacturing facilities

Nature of Engagement - Participation on energy efficiency information sharing meetings and conference calls, visits to manufacturing sites to assess and implement energy efficiency technology improvement projects, calculation and reporting of energy efficiencies gained through participation in the program.

Actions Advocated as Part of the Program - UTC has worked on expanding participation in the program by participating as speakers in DoE program marketing sessions and directly recruiting UTC suppliers to join the program. Beginning in 2015 key UTC suppliers are required to reduce their energy use and GHG emissions, and we allow suppliers who've joined Better Plants to use their membership as de facto proof of acceptable energy management performance.

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?

UTC's direct and indirect activities on climate change policy, supplier, engineering and operational GHG reduction goals, climate change related engagement plans, and our public positions on climate change are governed and coordinated by the UTC Sustainability Council. The Council is headed by UTC's Executive Vice President of EH&S and Sustainability, and includes vice presidents from UTC business units and functional areas (EH&S, Supply Management, Government Affairs, Legal, Engineering, Communications) with business interests in climate change and sustainability related risks and opportunities. Day to day implementation of climate change related program activities (product design, meeting with legislators, implementing GHG reduction projects in our factories, etc.) is the responsibility of the applicable business units, departments or facilities. Data on program progress is collected quarterly by the UTC climate change program manager and presented to the Council during its quarterly meetings. As warranted, the Council then provides direction on any corrective action or program modifications/expansion.

Additionally, UTC Communications has formal policies and review and approval procedures governing climate change-related external communications. UTC Government Affairs has a similar formal process used in their outreach to legislators and regulators. External climate change related program communications are coordinated at the Sustainability Council by Communications and Government Affairs representatives.

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

[UTC AR 2017.pdf](#)

Content elements

Governance

Emissions figures

Emission targets

Publication

In mainstream reports

Status

Complete

Attach the document

[UTC-2018-Proxy.pdf](#)

Content elements

Governance

Emissions figures

Emission targets

C14. 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.

C14.1

(C14.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Executive Vice President, EH&S and Sustainability	Chief Sustainability Officer (CSO)