

Ventas Inc - Climate Change 2018

C0. Introduction

C0.1

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

Note: All data below correct as of 12/31/2017.

Ventas, Inc., an S&P 500 company, is a real estate investment trust (“REIT”) with a highly diversified portfolio of seniors housing, healthcare, and research properties located throughout the United States (“U.S.”), Canada and the United Kingdom (“U.K.”). The Company generates \$2 billion of annual net operating income through its high-quality, diversified portfolio of approximately 1,200 seniors housing communities, medical office buildings (“MOBs”), life science and innovation centers, inpatient rehabilitation facilities and long-term acute care facilities, acute care hospitals and skilled nursing facilities. With almost 500 employees, Ventas is headquartered in Chicago, Illinois and also has a corporate office in Louisville, Kentucky. We lease all of our corporate offices.

Operating at the dynamic intersection of healthcare and real estate, which together comprise ~40% of U.S. GDP, Ventas has delivered superior long-term returns as the leading capital provider to leading senior living, healthcare and research institutions. Ventas primarily invests in seniors housing and healthcare properties through acquisitions. We lease our properties to leading, high-quality, unaffiliated tenants or operate them through independent third-party managers. Through our Lillibridge Healthcare Services, Inc. (“LHS”) subsidiary and our ownership interest in PMB Real Estate Services LLC (“PMBRES”), we also provide property management, leasing, construction management and advisory services to highly-rated hospitals and health systems throughout the U.S. In addition, Ventas funds the development of new seniors housing and healthcare properties and makes secured and non-mortgage loans and other healthcare-related investments.

Ventas maintains operational control for climate impacts in a portion of its portfolio, as defined below. Development and major redevelopment projects that are not yet operational are excluded from our operational control boundary. Once operational, they are included or excluded in our boundary according to the below. As of December 31, 2017, we had 14 properties under development.

Primarily Within Ventas Operational Control Boundary for Climate Change Impacts:

Seniors Housing Operating Portfolio (SHOP): ~29% of annualized NOI. Ventas invests in seniors housing communities throughout the U.S. and Canada and engages third-party operators, such as Atria Senior Living, Inc. and Sunrise Senior Living LLC, to manage those communities pursuant to long-term management agreements. Ventas recognizes the NOI from these communities in its consolidated financial statements including the management fees paid to its independent operators. Ventas approves and provides funding for capital expenditures (“CapEx”), including for sustainability-related initiatives such as energy, water and waste reduction projects. While we do not directly manage these properties, we include SHOP properties in our operational control boundary over climate impacts because we control the approval and funding of CapEx, which influences the climate-change impacts of these properties.

Office Portfolio: ~26% of annualized NOI. Ventas acquires, owns, develops, leases and manages MOBs and life science and innovation centers throughout the U.S. In 2017, about two-thirds of our Office Portfolio was within our operational control boundary for climate impacts. These properties are directly managed by LHS or indirectly managed by a third party operator, such as PMBRES for MOBs or Wexford Science & Technology, LLC (“Wexford”) for life science and innovation centers. The remainder of our Office Portfolio is triple-net leased or part of a hospital system utility shared services arrangement where we do not have operational control, and are excluded from our operational control boundary for climate change impacts.

Outside of Ventas Operational Control Boundary for Climate Change Impacts:

Triple-Net (NNN): ~38% of annualized NOI. Ventas owns seniors housing communities, inpatient rehabilitation and long-term acute care facilities, acute care hospitals and skilled nursing facilities throughout the U.S. and the U.K. We lease these properties to high-quality seniors housing and healthcare operating companies under “triple-net” or “absolute-net” leases that obligate the tenants to pay all property-related expenses. We have no operational control over climate change impacts from these properties.

Loans: ~7% of annualized NOI) includes loans primarily secured by healthcare real estate. We have no operational control over climate change impacts from the assets that secure these loans.

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	Yes	1 year
Row 2	January 1 2016	December 31 2016	<Not Applicable>	<Not Applicable>
Row 3	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Row 4	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>

C0.3

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

Canada
United States of America

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	The Ventas Board Chair and CEO (combined position) has direct oversight of climate-related issues as the Chair of the Ventas ESG Steering Committee. This committee oversees company-wide initiatives to improve our environmental footprint and energy efficiency efforts, in addition to corporate social responsibility and governance efforts. Our Board Chair/CEO provides regular (quarterly or more frequent) ESG updates to our Executive Leadership Team and also obtains approval and buy-in for ESG initiatives. Our Board Chair/CEO also provides quarterly updates to our Board of Directors on ESG matters, including climate-change impacts to our business.

C1.1b

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

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
Scheduled – all meetings	Reviewing and guiding strategy Reviewing and guiding major plans of action	The Ventas Chairman and CEO (combined position) provides quarterly updates of ESG issues, including climate-related issues, at all regularly scheduled meetings of the Ventas Board of Directors. The Ventas Chairman and CEO is the Chair the Ventas ESG Steering Committee, and is therefore well-positioned to provide ESG and climate-related updates to the Board. The Board provides guidance on strategy and major plans of action related to ESG and climate change matters, as appropriate.

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
Chief Executive Officer (CEO)	Both assessing and managing climate-related risks and opportunities	Quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored.

Organizational structure and rationale: The Ventas Board Chairman and CEO has the highest level of responsibility for ESG and climate related issues as the Chair of the Ventas ESG Steering Committee. This committee provides oversight and monitoring of Ventas's ESG strategy, including climate-change related impacts and initiatives.

The Ventas Chairman/CEO is vested with climate-change related responsibility (as the Chair of ESG SteerCo) in order to have centralized oversight and visibility of ESG and climate-related impacts to our business. Also, by having the most senior member of the Ventas Board and management team with this responsibility, we are able to maintain a coordinated response to climate change across all of our operations and ensure that climate-change related initiatives are effectively implemented across the company.

Specific responsibilities of the Ventas Chairman and CEO (as Chair of the ESG Committee) include:

- Providing guidance and ultimate approval of Ventas's annual environmental goals, such as implementation of energy reduction initiatives in our portfolio
- Providing guidance and approval of Ventas's environmental disclosures on our website and other reporting
- Providing guidance and approval for Ventas's business strategies related to climate change impacts

Ventas climate-related issues monitoring process: The Ventas ESG Committee is chaired by our Chairman and CEO and convened by our Director of Sustainability with representatives from our Investments, Asset Management and Marketing & Corporate Communications functions. It meets at least quarterly with additional ad hoc meetings as needed. The Committee regularly communicates findings with the Ventas ESG Reporting Working Group as well as the legal, HR, acquisitions and asset and risk management teams. Quarterly (or more frequent) ESG updates, including climate-change related topics and initiatives are provided to the Board of Directors and executive leadership team.

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

Energy reduction target

Comment

Per our proxy, ESG consideration for 2017 executive compensation included "Sustainability, Values, Reputation and Industry Leadership" Supporting evidence for this item included our Green building certification and rating labels, and our progress against our 10-year targets to reduce our environmental impact from a 2013 baseline, which includes 10% reductions in energy usage and greenhouse gas emissions, 5% reduction in water usage and 4% reduction in landfill waste.

Who is entitled to benefit from these incentives?

Other, please specify (Members of ESG Steering Committee)

Types of incentives

Monetary reward

Activity incentivized

Energy reduction target

Comment

Compensation structure (primarily discretionary bonus incentive) is tied (in part) to successful implementation of energy reduction initiatives throughout the Ventas portfolio. Examples include, LED lighting upgrades and energy efficiency improvements to HVAC operations.

Who is entitled to benefit from these incentives?

All employees

Types of incentives

Recognition (non-monetary)

Activity incentivized

Behavior change related indicator

Comment

Any employee that supports the company's efforts to manage climate change through the following types of activities may receive written and/or verbal recognition/praise from their managers, the Director of Sustainability and/or Ventas executives: a) Helps to improve consumption and emissions performance at the asset or corporate level b) Promotes efforts to reduce utility expenses via reduced consumption and improved, responsible purchasing efforts c) Identifies opportunities to accretively invest capital in energy-saving projects within the portfolio d) Assists in obtaining and/or maintaining ENERGY STAR certifications.

Who is entitled to benefit from these incentives?

Environment/Sustainability manager

Types of incentives

Monetary reward

Activity incentivized

Energy reduction project

Comment

Compensation structure (primarily discretionary bonus incentive) is tied (in part) to successful implementation of energy reduction initiatives throughout the Ventas portfolio. Examples include, LED lighting upgrades and energy efficiency improvements to HVAC operations.

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	0	1	
Medium-term	1	3	
Long-term	3	10	

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.

A specific climate change risk identification, assessment, and management process

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	Six-monthly or more frequently	>6 years	The Ventas Director of Sustainability and Director of Corporate Risk Management have day-to-day responsibility for identifying and assessing climate-related risks. These risks are monitored on an ongoing basis. As a long-term holder of real estate, Ventas considers risks up to 10 or more years into the future, as well as near term and medium term risks.

C2.2b

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

How risks are identified:

The Ventas Director of Sustainability identifies and assesses climate change risks to Ventas on an ongoing (at least monthly) basis through the following activities:

- Participation in real estate-specific, sustainability and climate-change related committees, boards, conferences and vendor discussions: Examples include the Nareit Real Estate Sustainability Council, IREM Sustainability Advisory Board and the Real Estate Roundtable Sustainability Policy Advisory Committee. These forums provide insight into how climate change is impacting the real estate industry (via regulation, new technology, etc.).
- Sustainability and climate-change related discussions with development partners and operators/managers: Through discussions with these external parties our Director of Sustainability is able to understand and assess how climate change is impacting operations in our portfolio.
- Partnership with third party experts in climate change: Ventas engages external consultants with expertise in real estate climate-related risks, such as new regulations and technologies. These vendors provide information specific to the Ventas portfolio on exposure to these risks. An example is exposure to city ordinances to report building energy use, which are being enacting in several cities across the U.S.

The Ventas Corporate Risk Management team routinely identifies and assesses climate-related risks (primarily related to severe weather and climate events) in conjunction with our insurance brokers, carriers and consultants. For new property acquisitions, climate risks are identified through property condition reports and Phase I Environmental Surveys which are required as part of our due diligence process. For existing assets, our asset management teams conduct site visits approximately annually, and has regular (weekly to monthly) discussions with the property managers and operators to understand all aspects of the asset, which encompasses risks from climate change.

In addition, our property insurance carrier help Ventas identify climate related risks to our portfolio (primarily weather-related). As flood maps are updated, our property carrier provides a risk analysis and mitigation suggestions. Throughout the year our property carrier provides emails with bulletins and flyers alerting the Company on best practices in avoiding and mitigating damages or loss associated with climate risk changes.

How risks are assessed:

The Director of Sustainability coordinates with relevant internal resources, such as the VP of Construction and Development, Legal, Technical Operations, and Asset Management to discuss and estimate how the identified risks could impact the portfolio. If a potential substantive (as defined below) impact is identified this is shared with our ESG Steering Committee to develop a mitigation plan.

The Ventas Corporate Risk Management team works with our property carries to assess weather-related climate risks by applying algorithms, data analytics and scenario analysis to our portfolio

Whether a risk has a substantive financial or strategic impact on our business is determined based on the potential for the risk to:

- Impact company Funds From Operations (FFO) on the order of ~\$500,000 or more
- Degrade Ventas's competitive position among its REIT peers
- Degrade Ventas's investor and other stakeholder relationships

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	For example, buildings in the Ventas portfolio are subject to various city energy benchmarking ordinances. These ordinances require energy reporting and fines may be charged for non-compliance.
Emerging regulation	Relevant, always included	For example, future regulation to limit carbon emissions from real estate could have a material impact on our financial and operational performance.
Technology	Relevant, always included	For example, new technologies to optimize the energy consumption by building HVAC systems could improve Ventas earnings through energy consumption savings.
Legal	Relevant, always included	As noted in 2.2b, Ventas evaluates the risk for environmental litigation claims for all new property acquisitions by conducting a Phase I Environmental Site Assessment. If issues are identified, they are mitigated or the property is not acquired
Market	Relevant, always included	For example, current and prospective tenants and residents in Ventas properties may increasingly demand low-carbon real estate options.
Reputation	Relevant, always included	For example, Ventas employees may increasingly demand to work for a company that has a track record of understanding and mitigating its climate change impacts.
Acute physical	Relevant, always included	As noted in 2.2b, the Ventas Risk Management team works with our property insurance carriers to assess the risk of increased severity of extreme weather events within our real estate portfolio.
Chronic physical	Relevant, always included	For example, as temperatures rise and/or are more volatile, this will incur greater heating and cooling costs in the Ventas real estate portfolio, which could negatively impact our earnings.
Upstream	Relevant, always included	For example, our institutional shareholders are increasingly seeking to understand the impacts of the Ventas portfolio on climate change.
Downstream	Relevant, always included	For example, consistent with our Market risks, current and prospective tenants and residents in Ventas properties may increasingly demand low-carbon real estate options.

C2.2d

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

For **transitional** climate change-related risks and opportunities, the Ventas Director of Sustainability would work with the Ventas ESG Steering Committee or the Ventas Management Capital Committee (if related to an investment opportunity) to develop a plan to mitigate the risk or capitalize on the opportunities. Working groups or task forces within the company would be formed as needed to implement the activities needed to mitigate or capitalize on the risks. The Director of Sustainability would work with the relevant groups across the Ventas organization to implement any measures approved by the ESG Steering Committee or Management Capital Committee.

For **physical** climate change-related risks and opportunities, the Ventas Corporate Risk Management team works with the Investments team (for new acquisitions) to ensure that our insurance programs are updated to incorporate the risks exposure from new properties and that our legal documents (purchase and sale agreements, management agreements, lease agreements) protect Ventas from exposure to these risks. For existing assets, the Risk Management team collaborates with our property insurance carriers, the Ventas asset management and property management teams, and our operators to ensure that our properties are prepared for severe weather and related emergencies.

Transitional Risk Example:

The Ventas Director of Sustainability presents an annual budget to the Management Capital Committee for climate-change related capital investment opportunities (such as LED lighting projects) in our portfolio. This discussion includes the estimated costs, returns and climate-change mitigation potential of the projects.

Physical Risk Example:

Ventas's Corporate Risk Management group partnered with our medical office property management team to update and implement our severe-weather emergency preparedness plans, based on indications from our property carriers for increased exposure and intensity of these types of events. By applying this mitigation process we are able to limit the damage to our buildings, and the potential exposure to dangerous conditions for our tenants and our property management employees.

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

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

Company- specific description

A significant regulation-driven climate change risk faced by Ventas is the enactment of new building codes for minimum product performance. Such regulations could increase construction costs and costs of maintaining our asset base. An example is state and local adoption of stricter ASHRAE 90.1 standards and IEC Code. Increased use of specialized building materials and energy efficient equipment could increase project costs 1-5%. The time horizon for this risk is medium-term (~1-3 years).

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Potential financial impact

15000000

Explanation of financial impact

Ventas' active development/redevelopment commitments are about \$500M. Assuming a 3% increase (mid-point of the 1% - 5% estimate noted above), Ventas would face \$15M of higher costs development costs.

Management method

Mitigation includes gaining experience in construction methods and researching high performance materials/equipment to minimize additional costs (e.g., through dedicated sustainability resources and partnering with developers who focus on LEED development). A dedicated Director of Sustainability position was filled in 2016 and this resource is working with our Construction and Development group on sustainable development policies to mitigate this risk.

Cost of management

40000

Comment

A dedicated Director of Sustainability position was created and filled in 2016. Based on a portion of the Director of Sustainability's time and additional time spent by existing internal employees the estimated cost to manage is approximately \$50,000 annually.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type

Physical risk

Primary climate-related risk driver

Acute: Increased severity of extreme weather events such as cyclones and floods

Type of financial impact driver

Increased insurance premiums and potential for reduced availability of insurance on assets in "high-risk" locations

Company- specific description

With properties located across the United States, Canada and the United Kingdom, including coastal properties, Ventas is vulnerable to increased frequency and severity of extreme weather (primarily hurricanes and blizzards). The primary, ongoing financial impact from this risk is increased property insurance premiums. Increased frequency of weather-related insurance losses globally are increasing competition in the insurance markets. The timeframe for this risk is over the next 1-3 years.

Time horizon

Medium-term

Likelihood

More likely than not

Magnitude of impact

Medium

Potential financial impact

500000

Explanation of financial impact

Unmitigated, this could result in increased annual insurance costs to Ventas of up to \$500,000. This is based on average premium increases currently being experienced in insurance markets.

Management method

Ventas seeks to mitigate its exposure to premium increases in the near term by ensuring that we have resilient buildings that can withstand extreme weather and implementing strong emergency preparedness plans at our buildings. The costs related to this are primarily existing internal overhead, but may include costs to upgrade physical plant up to ~\$100,000. Long-term, Ventas seeks to reduce its greenhouse gas emissions to moderate climate change. These expenditures will vary widely depending of the economics of emissions-reductions projects, such as installing energy-efficient equipment and are not included here.

Cost of management

100000

Comment

Costs related to physical plant upgrades is estimated to be \$100,000. There is no incremental cost associated with negotiating competitive insurance rates through a bidding process, which is routinely conducted by our corporate risk management team. Costs to develop emergency preparedness plans are minimal and can be completed by existing internal resources.

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Customer

Risk type

Transition risk

Primary climate-related risk driver

Reputation: Increased stakeholder concern or negative stakeholder feedback

Type of financial impact driver

Reputation: Reduction in capital availability

Company- specific description

Institutional equity and debt investors are the primary source of capital for Ventas. Increasingly, these investors are incorporating climate impacts and other sustainability and ESG data into investment decisions. If Ventas does not maintain its reputation of being an environmentally and socially responsible company, it could reduce capital availability from these investors. The timeframe for this risk is over the next 3-10 years.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Potential financial impact

8200000

Explanation of financial impact

As more capital providers use climate change impacts to direct their investments, the supply of capital for companies that don't meet the criteria will be reduced. This is likely to impact a relatively small amount of capital relative to all capital available and is difficult to quantify. If it were assumed that the overall impact is a 2.5 basis points decrease to our enterprise value, due to higher costs of debt and equity, this would result in an unmitigated impact of \$8.2 million (based on Ventas enterprise value of \$32.8 billion as of 12/31/2017).

Management method

Current risk management methods include making sustainability a focal point for our existing portfolio and a factor in our acquisition and divestiture strategy. Spearheading these efforts is a Director of Sustainability (hired in 2016) and an ESG Committee. The ESG Committee is comprised of employees from different functional areas that meet regularly to consolidate and improve our awareness, information collection and disclosure regarding environmental matters. Currently our portfolio includes 28 properties built to LEED standards, 2 completed buildings with pending LEED certifications and 7 under construction. Additionally, Ventas is an ENERGY STAR partner with 69 properties ENERGY STAR Certified. As a signatory to the CDP we are committed to

transparency and timely disclosure of climate change risk. Every year, we also participate in the Global Real Estate Sustainability Benchmark (GRESB) survey and the RobecoSAM Corporate Sustainability Assessment.

Cost of management

200000

Comment

Based on a portion of the Director of Sustainability's time and additional time spent by existing internal employees the estimated cost to manage is approximately \$200,000 annually.

C2.4

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

Yes

C2.4a

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

Identifier

Opp1

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Type of financial impact driver

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

Company- specific description

Product efficiency regulations and standards such as ASHRAE 90.1 standards and IEC Code will lead to improved energy efficiency across our portfolio, resulting in lower operating costs and higher market values.

Time horizon

Long-term

Likelihood

More likely than not

Magnitude of impact

Medium-high

Potential financial impact

20000000

Explanation of financial impact

Conforming to and complying with regulation changes related to product efficiency standards present opportunities that could have a positive financial impact through a reduction in operating costs due to lower energy consumption and higher market valuations. The potential energy savings are 35% (on average) in ENERGY STAR certified buildings. Extrapolating those savings across the Ventas portfolio could provide cost savings between \$20M - \$30M annually, as well as increasing margins by approximately 100bps.

Strategy to realize opportunity

The specific methods we are using to take advantage of these opportunities include making strategic investments to increase the efficiency of our facilities, reduce emissions and costs, and continuing to voluntarily partner/comply with third party green building standards such as ENERGY STAR and LEED which are closely aligned with the latest ASHRAE 90.1 and IEC Code standards.

Management of this opportunity is ongoing, and is expected to continue in perpetuity.

Cost to realize opportunity

9000000

Comment

While costs associated with increasing efficiencies of our existing facilities and constructing new energy efficient facilities can be significant, we believe the operational cost savings of an energy efficient building and the increased market valuation can result in additional revenue. Extrapolating a cost premium of 1% to 5% across our existing development platform of \$300M could net a total increase in capital spending of between \$3M to \$15M. We estimate the cost at the mid-point of this range (\$9M). In addition, capital would be required for in energy efficiency projects at our standing property portfolio. Most of this investment would have a financial return/payback, and is not considered a cost to realize this opportunity.

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

As average global temperatures continue to rise, Ventas's low-carbon products (such as LEED and Energy Star certified buildings) will become more attractive to potential tenants, residents and customers. This increased demand for our assets could allow Ventas and its operators to earn a pricing premium through higher rents. It may also lower building operating costs as workers in our buildings may be more engaged and healthy working in a 'green' building, which could lower employee turnover and health benefit costs. We anticipate the timeline for this opportunity to be long-term, over the next 3-10 years.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Potential financial impact

36000000

Explanation of financial impact

Assuming a 1% revenue premium from increased consumer demand for Ventas properties, this would result in additional revenue of \$36 million (total 2017 revenue was \$3.6 billion).

Strategy to realize opportunity

Specific methods to realize these opportunities include (a) collaborating with customers to improve environmental awareness (b) implementing energy conservation and renewable energy programs such as LED lighting, efficient HVAC systems and solar (c) pursuing and publicizing sustainability certifications such as LEED and Energy Star to expand our low-carbon products and attract tenants and operators focused on sustainability. These initiatives can be pursued by our Director of Sustainability in conjunction with our operating partners and construction & development team. The cost to pursue LEED and Energy Star certification could average about \$2,000 per property. Investment capital would also be required to transition to low-emission operations at our buildings (e.g., implementation of LED lighting). This is excluded from the costs however, because it is capital investment with a return and is not an expense.

Cost to realize opportunity

2400000

Comment

Assuming \$2,000 on average to pursue sustainable building certifications such as LEED and Energy Star, the total cost to implement in our portfolio of approximately 1,200 assets is \$2.4 million.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Supply Chain

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

Other, please specify (Increased access to capital)

Company- specific description

As indicated in 2.3, institutional investors are increasingly incorporating climate change impacts in their screening process. If Ventas can position itself as a leading REIT in terms of its climate change performance (in addition to its financial performance), Ventas will have greater potential sources of capital. Capital is one of the primary components of Ventas's cost of doing business. We anticipate the timeline for this opportunity to be long-term, over the next 3-10 years.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Potential financial impact

8200000

Explanation of financial impact

As more capital providers use climate change impacts to direct their investments, the supply of capital for companies that meet the criteria will increase. This is likely to impact a relatively small amount of capital relative to all capital available and is difficult to quantify. If it were assumed that the overall impact is a 2.5 basis points increase to our enterprise value, due to lower costs of debt and equity, this would result in an increase of \$8.2 million (based on Ventas enterprise value of \$32.8 billion as of 12/31/2017).

Strategy to realize opportunity

Ventas's strategy to realize this opportunity is to make sustainability a focal point for our existing portfolio and a factor in our acquisition and divestiture strategy. Spearheading these efforts is a Director of Sustainability (hired in 2016) and an ESG Committee. The ESG Committee is comprised of employees from different functional areas that meet regularly to consolidate and improve our awareness, information collection and disclosure regarding environmental matters. Currently our portfolio includes 28 properties built to LEED standards, 2 completed buildings with pending LEED certifications and 7 under construction. Additionally, Ventas is an ENERGY STAR partner with 69 properties ENERGY STAR Certified. As a signatory to the CDP we are committed to transparency and timely disclosure of climate change risk. Every year we also participate in the Global Real Estate Sustainability Benchmark (GRESB) survey and the RobecoSAM Corporate Sustainability Assessment.

Cost to realize opportunity

300000

Comment

The cost of a dedicated Director of Sustainability and additional time spent by existing internal employees is approximately \$300,000 annually.

C2.5

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

	Impact	Description
Products and services	Not yet impacted	How this will impact Ventas: As average global temperatures continue to rise, Ventas's low-carbon products (such as LEED and Energy Star certified buildings) will become more attractive to potential tenants, residents and customers. This increased demand for our assets could allow Ventas and its operators to earn a pricing premium through higher rents. Magnitude of impact: Medium; potential for 1% revenue increase from low carbon properties Potential timeline of impact: Long-term, over the next 3-10 years
Supply chain and/or value chain	Not yet impacted	How this will impact Ventas: If Ventas can position itself as a leading REIT in terms of it's climate change performance (in addition to its financial performance), Ventas will have greater access to capital, which will reduce it's capital costs. Capital is one of the primary components of Ventas's cost of doing business. Magnitude of impact: Medium; potential 2.5 basis point increase in our enterprise value Potential timeline of impact: Long-term, over the next 3-10 years
Adaptation and mitigation activities	Impacted for some suppliers, facilities, or product lines	How this is impacting Ventas and magnitude: The enactment of new building codes for minimum building energy performance is impacting Ventas in its development and redevelopment activities. Such regulations could increase construction costs and costs of maintaining our asset base. An example is state and local adoption of stricter ASHRAE 90.1 standards and IEC Code. Increased use of specialized building materials and energy efficient equipment could increase project costs 1-5%.
Investment in R&D	Impacted	How this is impacting Ventas: Ventas is committed to low-carbon products by seeking LEED certification for its new developments. Magnitude of impact: At the end of 2017, about 90% of Ventas's portion of new development investment was in properties seeking LEED certification.
Operations	Impacted for some suppliers, facilities, or product lines	How this is impacting Ventas: Ventas works with its operating partners and Lillibridge subsidiary to implement energy conservation projects in it's portfolio. These projects primarily include LED lighting and HVAC efficiency measures. Magnitude of impact: In 2017, Ventas approved over \$20 million in sustainable, NOI-enhancing capital investments , which included these types of energy conservation projects.
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	Not yet impacted	How this will impact Ventas: As average global temperatures continue to rise, Ventas's low-carbon products (such as LEED and Energy Star certified buildings) will become more attractive to potential tenants, residents and customers. This increased demand for our assets could allow Ventas and its operators to earn a pricing premium through higher rents. Magnitude of impact: Medium; potential for 1% revenue increase from low carbon properties Potential timeline of impact: Long-term, over the next 3-10 years
Operating costs	Impacted for some suppliers, facilities, or product lines	How this is impacting Ventas: Ventas works with its operating partners and Lillibridge subsidiary to implement energy conservation projects in it's portfolio. These projects primarily include LED lighting and HVAC efficiency measures. Magnitude of impact: In 2017, Ventas approved over \$20 million in sustainable, NOI-enhancing capital investments , which included these types of energy conservation projects. These projects typically have ROIs from 10-20%, indicating operating cost savings of \$200,000 - 400,000. Operating costs are also impacted by the potential for higher insurance costs due to more frequent and severe extreme weather vents. The magnitude of this impact is potentially up to \$500,000 annually for higher premiums. This is based on our knowledge of current market premium increases.
Capital expenditures / capital allocation	Impacted for some suppliers, facilities, or product lines	How this is impacting Ventas: Ventas works with its operating partners and Lillibridge subsidiary to implement energy conservation projects in it's portfolio. These projects primarily include LED lighting and HVAC efficiency measures. Magnitude of impact: In 2017, Ventas approved over \$20 million in sustainable, NOI-enhancing capital investments , which included these types of energy conservation projects.
Acquisitions and divestments	Impacted	How this is impacting Ventas: Ventas has incorporated sustainability and climate change into its acquisitions due diligence process. We determine if properties have implemented energy efficiency measures and if they have green building certifications such as LEED or Energy Star. In addition, we evaluate the impact of new acquisitions on our insurance policies. The exposure of new properties to extreme weather events such as hurricanes, blizzards and flooding will impact our insurance costs. Magnitude of impact: The assessments noted above our fully integrated into our due diligence process.
Access to capital	Not yet impacted	How this will impact Ventas: If Ventas can position itself as a leading REIT in terms of it's climate change performance (in addition to its financial performance), Ventas will have greater access to capital, which will reduce it's capital costs. Capital is one of the primary components of Ventas's cost of doing business. Magnitude of impact: Medium; potential 2.5 basis point increase in our enterprise value Potential timeline of impact: Long-term, over the next 3-10 years
Assets	Not yet impacted	How this will impact Ventas: Ventas's asset values may be positively or negatively impacted by climate change factors. Positive impacts include increased value from energy-efficient buildings (such as LEED and Energy Star certified buildings), which may achieve higher cash flows from higher revenues (increased tenant demand) and lower operating costs (lower energy consumption). Negative impacts include lower property values from exposure more frequent and severe extreme weather events. Magnitude of impact: Medium; potentially a 1-2% increase or decrease (on a property by property basis) in asset values Potential timeline of impact: Long term, over the next 3-10 years
Liabilities	Not impacted	Ventas is not exposed to material environmental litigation or carbon tax or trading schemes.
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.

1. How and why Ventas's business strategy has been influenced by climate-related issues: Integration of climate change into Ventas's business strategy is manifested in processes across our enterprise. Pursuing responsible and effective environmental practices is a key strategic objective for our existing portfolio of buildings, for future acquisitions and for the daily work of our employees. Strong environmental performance and disclosures will increase investor demand for Ventas stock and lead to improved risk-adjusted returns from our real estate holdings.
2. Link to targets: To measure our progress and ensure that we are mitigating the environmental impact of our real estate portfolio, Ventas has short-, medium- and long-term energy and emissions reduction targets that are continuously measured, and progress is reported to investors at least annually on our website. Ventas has set 10-year consumption reduction targets of 10% for energy consumption and GHG emissions, 5% for water consumption, and a 4% for waste directed to landfills.
3. Business decisions influenced by climate change aspects of strategy: a) Ventas and its development partners elected to pursue LEED certification for the majority of our new development projects, representing over 90% of Ventas's total share of development costs for active projects in 2017. LEED, or Leadership in Energy and Environmental Design, is the most widely used green building rating system in the world. LEED buildings save energy, water, resources, generate less waste and support human health. Ventas also approved more than \$20 million in sustainable capital investments that both mitigated our environmental impact and provided a strong financial return to Ventas. These projects include LED lighting upgrades, HVAC equipment upgrades, and building automation systems. b) In 2017, we made a business decision to create an ESG Steering Committee, which includes our Chairman and CEO, Debra Cafaro. A material factor in this decision was the desire to centralize our strategy, decision-making and disclosures related to our company environmental impacts and to ensure that we had visibility and buy-in from the highest level of leadership in our organization. Related to this, we modified the reporting structure for our Director of Sustainability to provide better integration and visibility with our executive leadership team for climate-change related initiatives (such as investments in energy reduction projects in our real estate portfolio). c) In 2017, we relocated our Louisville corporate office, where about half of our employees work, to a new, LEED-certified office building. Ventas made a strategic, climate-related decision to pursue LEED Gold certification for our interior office build-out to minimize our impact on the environment and to provide a healthy environment for our employees.
4. Aspects of climate change that have influenced our strategy include: a) Investor demand and desire to invest in companies that have strong disclosures and performance on their climate impacts and strategies b) Buildings that are more energy, water and waste efficient (and thus have lower emissions and other environmental impacts) also have better financial performance from lower operating expenses. Environmentally sustainable buildings also have stronger demand from tenants and residents. c) Ventas employees are part of our strategic advantage and our employees want to work for companies with strong climate-related disclosures and performance.
5. How our short-term strategy is influenced by climate-change: Annually, we identify capital investment opportunities that will increase the energy efficiency of our properties and provide strong financial returns to Ventas. We develop a budget for these projects that is reviewed and approved by our capital committee. As these investments continue to generate strong risk adjusted returns, we continue to evaluate and invest in similar programs more broadly across our portfolio to reduce energy consumption and GHG emissions.
6. How our long-term strategy is influenced by climate-change: We work with third party consultants and vendors in our Office and seniors housing operating (SHOP) portfolios to identify outlier properties where energy consumption is above portfolio averages. We conduct further analysis to determine drivers of higher consumption and how we can improve. We continuously pursue this process to harvest emissions reduction strategies and drive cost savings in the future (>10 years). Our Director of Sustainability also researches trends in climate-change mitigation strategies relevant to real estate companies to ensure that we are evaluating the latest technologies and advancements to ensure our buildings remain energy efficient over the long-term.
7. Strategic advantages gained over competitors: Ventas' climate change strategies give us an advantage over competitors in several ways. One is that through our continuous efforts to reduce energy, water and waste from our portfolio, we lower operating costs. Lower operating costs directly benefit our financial performance and may allow us to charge higher rent, further benefiting financial performance. Another is that the positive sustainability profile makes our buildings more attractive to tenants and operators who are conscious of environmental impact and climate change risks. This lowers our lease turnover, reduces our vacancy rate and may allow us to charge higher rents than competitors. A third advantage is that institutional real estate investors are increasingly integrating climate change factors into investment decisions. By maintaining strong climate-change related strategies, we expand the investor base for our stock. Finally, our corporate focus on environmental responsibility is attractive to potential employees, and allows us to attract and retain the best talent.

C3.1d

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

Climate-related scenarios	Details
Other, please specify (RMS Risk Modeling Software)	<p>The primary climate-related scenario analysis implemented at Ventas is through our property insurance consultants, who utilize RMS risk modeling software, incorporating qualitative and quantitative aspects, to analyze our portfolios. The software produces metrics that assist in determining appropriate limits of insurance. It also models how portfolio additions/deletions will affect expected losses. RMS risk models use millions of data points, which are continually updated, reflecting localized hazard variations, and thus take into account the physical affects from climate change such as extreme weather and rising sea levels. How the selected scenario(s) were identified, with reference to the inputs, assumptions and analytical methods used: RMS software is an industry leading extreme weather and catastrophe modeling system. Proprietary software code is used to assess weather and catastrophe inputs that are researched by a data team. A description of the time horizon(s) considered, and why they are relevant to your organization: RMS creates loss estimates based on based on time periods, e.g. 100, 250, 500, 750 year events. These time horizons provide probable maximum loss for catastrophic events. Ventas utilizes this data to determine risk appropriate insurance limits. A description of the areas of your organisation that have been considered as part of the scenario analysis: All assets owned and insured by Ventas (the majority of our portfolio) are analyzed/modeled in the weather and catastrophe analysis performed with RMS software. A company specific summary of the results of the conducted scenario analysis: Ventas purchases earthquake and named windstorm coverage in excess of the appropriate Probable Maximum Loss results generated by the most current RMS scenario analysis. A description of how the results of the scenario analysis have INFORMED and DIRECTLY INFLUENCED Ventas business objectives and strategy: Ventas uses the results of the RMS models in determining if overall risk objectives and strategies are being met. By reviewing how exposed the portfolio of assets is to loss, and applying Ventas’s overall risk appetite, Ventas is able to determine its risk appropriate limits of insurance. This also assists Ventas in risk concentration analysis in particular market areas (metropolitan statistical areas or MSAs). This scenario analysis is also conducted to determine insurance limits for each new property acquisition to make sure that Ventas’s risk strategy and objectives are met and are in line with the company’s risk appetite.</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

% emissions in Scope

100

% reduction from base year

10

Base year

2013

Start year

2013

Base year emissions covered by target (metric tons CO2e)

46122.36

Target year

2023

Is this a science-based target?

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

% achieved (emissions)

57

Target status

Underway

Please explain

A target of 10% reduction is set for 2023 with the base line year of 2013. Ventas is working towards meeting this target with energy reduction initiatives and is investigating renewable energy options. Note: The base year emissions are 100% for operations that we still owned in 2017 within our operational control boundary (it excludes emissions from properties that we no longer own).

Target reference number

Abs 2

Scope

Scope 2 (location-based)

% emissions in Scope

100

% reduction from base year

10

Base year

2013

Start year

2013

Base year emissions covered by target (metric tons CO2e)

183540.01

Target year

2023

Is this a science-based target?

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

% achieved (emissions)

0

Target status

Underway

Please explain

A target of 10% reduction is set for 2023 with the base line year of 2013. Ventas is working towards meeting this target with energy reduction initiatives and is investigating renewable energy options. We believe that the reason our % achieved is not pro-rata with time elapsed may be due to issues with our base year data. We are investigating this further. Note: The base year emissions are 100% for operations that we still owned in 2017 within our operational control boundary (it excludes emissions from properties that we no longer own).

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	5	
To be implemented*	98	21932
Implementation commenced*	68	3014
Implemented*	1237	26698
Not to be implemented	0	

C4.3b

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

Activity type

Energy efficiency: Building fabric

Description of activity

Insulation

Estimated annual CO2e savings (metric tonnes CO2e)

114

Scope

Scope 1

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

14475

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

306801

Payback period

21-25 years

Estimated lifetime of the initiative

21-30 years

Comment

Multiple wall and roof insulation improvement projects, and window replacements were carried out to improve the insulation on buildings, and therefore improve the energy efficiency. This was carried out on both the Senior Housing and Medical Office building types.

Activity type

Energy efficiency: Processes

Description of activity

Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)

705

Scope

Scope 1

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

94760

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

540489

Payback period

4 - 10 years

Estimated lifetime of the initiative

6-10 years

Comment

Systems commissioning and retro-commissioning projects were carried out at the Medical Office buildings leading to improved energy efficiencies.

Activity type

Energy efficiency: Building services

Description of activity

HVAC

Estimated annual CO2e savings (metric tonnes CO2e)

11486

Scope

Scope 1

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

1150886

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

11045855

Payback period

4 - 10 years

Estimated lifetime of the initiative

11-15 years

Comment

Projects were carried out in both the Medical Office and Senior Housing building types to improve existing HVAC systems, replace existing HVAC systems with more efficient systems, and to improve HVAC control systems.

Activity type

Energy efficiency: Building services

Description of activity

Lighting

Estimated annual CO2e savings (metric tonnes CO2e)

14136

Scope

Scope 1

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

1964718

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

7457390

Payback period

4 - 10 years

Estimated lifetime of the initiative

6-10 years

Comment

A large number of CFL and LED lighting upgrades/retrofits were carried out to improve the energy efficiency of the lighting systems across the Senior Housing and Medical Office building types.

Activity type

Energy efficiency: Building services

Description of activity

Other, please specify (Appliance Upgrades)

Estimated annual CO2e savings (metric tonnes CO2e)

257

Scope

Scope 1

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

36979

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

1643829

Payback period

>25 years

Estimated lifetime of the initiative

6-10 years

Comment

Projects were carried out for the installation of new energy efficient appliances in the Senior Housing building type. This involved upgrades for appliances such as Computers, Kitchen Appliances, Televisions and other AV equipment.

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

Method	Comment
Compliance with regulatory requirements/standards	Many sustainability measures have been mandated through legislation. Ventas strives to be compliant and often exceeds standards for minimum compliance.
Dedicated budget for energy efficiency	Energy efficiency projects are included in the annual budgets for Ventas's operating segments (Seniors Housing and Office). These projects include controls upgrades, installation of building automation systems, HVAC equipment improvements, purchase of energy efficient appliances, LED lighting retrofits and other projects.
Dedicated budget for low-carbon product R&D	Ventas's seniors housing operating budgets include allocations for ENERGY STAR certification costs. Ventas typically seeks LEED certification for new developments, and costs for certification are included in our development budgets.
Employee engagement	Employees are encouraged to proactively identify opportunities for energy and emissions reductions at Ventas properties and in their everyday corporate activities.
Other	Ventas seeks to pilot new technologies and services, such as battery storage within its portfolio. These initiatives are typically focused on Ventas's operating segments (Seniors Housing and Office).

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

Company-wide

Description of product/Group of products

1. LEED Certified buildings: Ventas owns (primarily via development) 37 LEED-certified buildings (including 7 active developments), which avoided emissions during the construction and development from sustainable construction and waste management practices, and operate with lower GHG emissions from efficient lighting/appliances, and HVAC systems. 2. ENERGY STAR® Certified buildings (“ESTAR buildings”): Ventas owns 69 ESTAR buildings. These buildings save energy, save money, and help protect the environment by generating fewer greenhouse gas emissions than typical buildings. To be certified as ENERGY STAR, a building must meet strict energy performance standards set by US Environmental Protection Agency. ESTAR buildings must earn an ENERGY STAR score of 75 or higher, indicating that it performs better than at least 75 percent of similar buildings nationwide. The ENERGY STAR score accounts for differences in operating conditions, regional weather data, and other important considerations.

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

Low-carbon product and avoided emissions

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

Low-Carbon Investment (LCI) Registry Taxonomy

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

13.3

Comment

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 2016

Base year end

December 31 2016

Base year emissions (metric tons CO2e)

79026.01

Comment

Restatement of 2016 data due to change in control boundary: In 2017, Ventas modified its control boundary from financial control to operational control. Ventas has control over climate change impacts for properties under its operational control, which was 537 properties in 2017. Using operational control for our boundary more accurately reflects Ventas's climate change impacts and is consistent with how peer companies report their climate change impacts and emissions. We expect to use operational control for our boundary going forward. See C0.1 for more information on how operational control is defined for Ventas. Emissions from properties owned by Ventas but not within our operational control, such as NNN-leased properties, are now included in Scope 3 emissions (Category 13: Downstream Leased Assets).

Scope 2 (location-based)

Base year start

January 1 2016

Base year end

December 31 2016

Base year emissions (metric tons CO2e)

372178

Comment

Restatement of 2016 data due to change in control boundary: In 2017, Ventas modified its control boundary from financial control to operational control. Ventas has control over climate change impacts for properties under its operational control, which was 537 properties in 2017. Using operational control for our boundary more accurately reflects Ventas's climate change impacts and is consistent with how peer companies report their climate change impacts and emissions. We expect to use operational control for our boundary going forward. See C0.1 for more information on how operational control is defined for Ventas. Emissions from properties owned by Ventas but not within our operational control, such as NNN-leased properties, are now included in Scope 3 emissions (Category 13: Downstream Leased Assets).

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)**

77502.99

End-year of reporting period

<Not Applicable>

Comment

These emissions are for the current reporting year of 2017 (1/1/2017-12/31/2017). Ventas calculates the global Scope 1 emissions based on the EPA Emission factors based on fuel type. For Scope 1, Ventas calculated an emissions breakdown of CO2, CH4, and N2O with the IPCC 5th Assessment global warming potentials to arrive at the total CO2e emissions. This was calculated for all properties within operational control which had a natural gas use during the reporting period. Restatement of 2016 data due to change in control boundary: In 2017, Ventas modified its control boundary from financial control to operational control. Ventas has control over climate change impacts for properties under its operational control, which was 537 properties in 2017. Using operational control for our boundary more accurately reflects Ventas's climate change impacts and is consistent with how peer companies report their climate change impacts and emissions. We expect to use operational control for our boundary going forward. See C0.1 for more information on how operational control is defined for Ventas. Emissions from properties owned by Ventas but not within our operational control, such as NNN-leased properties, are now included in Scope 3 emissions (Category 13: Downstream Leased Assets).

Row 2**Gross global Scope 1 emissions (metric tons CO2e)**

79026.01

End-year of reporting period

2016

Comment

These emissions are for the base year of 2016 (1/1/2016-12/31/2016). Ventas calculates the global Scope 1 emissions based on the EPA Emission factors based on fuel type. For Scope 1, Ventas calculated an emissions breakdown of CO2, CH4, and N2O with the IPCC 5th Assessment global warming potentials to arrive at the total CO2e emissions. This was calculated for all properties within operational control which had a natural gas use during the reporting period. Restatement of 2016 data due to change in control boundary: In 2017, Ventas modified its control boundary from financial control to operational control. Ventas has control over climate change impacts for properties under its operational control, which was 537 properties in 2017. Using operational control for our boundary more accurately reflects Ventas's climate change impacts and is consistent with how peer companies report their climate change impacts and emissions. We expect to use operational control for our boundary going forward. See C0.1 for more information on how operational control is defined for Ventas. Emissions from properties owned by Ventas but not within our operational control, such as NNN-leased properties, are now included in Scope 3 emissions (Category 13: Downstream Leased Assets).

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 no operations where we are able to access electricity supplier emission factors or residual emissions factors and are unable to report a Scope 2, market-based figure

Comment

C6.3

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

Row 1

Scope 2, location-based

363660.78

Scope 2, market-based (if applicable)

<Not Applicable>

End-year of reporting period

<Not Applicable>

Comment

These emissions are for the current reporting year of 2017 (1/1/2017-12/31/2017). Ventas calculates global Scope 2 emissions based on the EPA E-grid, and IEA Emission factors. For properties within the United States, the regional emission factors are derived based on zip code for each property from the EPA e-Grid emissions factors database. For properties outside the United States, the emission factors are derived based on the Country from the IEA Emission factors database. These emission factors are then used to calculate the emissions breakdown of CO2, CH4, and N2O with the IPCC 5th Assessment global warming potentials to arrive at the total CO2e emissions, based on the electricity usage. For properties lacking complete electricity usage data for the reporting period, estimations were made based on the size of the property and property type. Scope 2 emissions are calculated for all properties within operational control. Restatement of 2016 data due to change in control boundary: In 2017, Ventas modified its control boundary from financial control to operational control. Ventas has control over climate change impacts for properties under its operational control, which was 537 properties in 2017. Using operational control for our boundary more accurately reflects Ventas's climate change impacts and is consistent with how peer companies report their climate change impacts and emissions. We expect to use operational control for our boundary going forward. See C0.1 for more information on how operational control is defined for Ventas. Emissions from properties owned by Ventas but not within our operational control, such as NNN-leased properties, are now included in Scope 3 emissions (Category 13: Downstream Leased Assets).

Row 2

Scope 2, location-based

372177.99

Scope 2, market-based (if applicable)

<Not Applicable>

End-year of reporting period

2016

Comment

These emissions are for the base year of 2016 (1/1/2016-12/31/2016). Ventas calculates global Scope 2 emissions based on the EPA E-grid, and IEA Emission factors. For properties within the United States, the regional emission factors are derived based on zip code for each property from the EPA e-Grid emissions factors database. For properties outside the United States, the emission factors are derived based on the Country from the IEA Emission factors database. These emission factors are then used to calculate the emissions breakdown of CO2, CH4, and N2O with the IPCC 5th Assessment global warming potentials to arrive at the total CO2e emissions, based on the electricity usage. For properties lacking complete electricity usage data for the reporting period, estimations were made based on the size of the property and property type. Scope 2 emissions are calculated for all properties within operational control. Restatement of 2016 data due to change in control boundary: In 2017, Ventas modified its control boundary from financial control to operational control. Ventas has control over climate change impacts for properties under its operational control, which was 537 properties in 2017. Using operational control for our boundary more accurately reflects Ventas's climate change impacts and is consistent with how peer companies report their climate change impacts and emissions. We expect to use operational control for our boundary going forward. See C0.1 for more information on how operational control is defined for Ventas. Emissions from properties owned by Ventas but not within our operational control, such as NNN-leased properties, are now included in Scope 3 emissions (Category 13: Downstream Leased Assets).

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) Account for your organization's Scope 3 emissions, disclosing and explaining any exclusions.**Purchased goods and services****Evaluation status**

Not relevant, explanation provided

Metric tonnes CO2e**Emissions calculation methodology****Percentage of emissions calculated using data obtained from suppliers or value chain partners****Explanation**

Purchased goods and services would consist of supplies for corporate headquarters and operations. These inputs are typically commodities, with no material supply chain risk. These emissions are not relevant to Ventas's Scope 3 emissions due to several factors, including: a) risk (there is minimal climate-change risk exposure to Ventas from these activities), b) stakeholders (this is not deemed critical by our stakeholders), and c) influence (Ventas has limited ability to meaningfully reduce the emissions from these purchases).

Capital goods**Evaluation status**

Not relevant, explanation provided

Metric tonnes CO2e**Emissions calculation methodology****Percentage of emissions calculated using data obtained from suppliers or value chain partners****Explanation**

For Ventas, this would include HVAC equipment, lighting, and other capital equipment required to operate our real estate assets. These emissions are not relevant to Ventas's Scope 3 emissions due to several factors, including: a) risk (there is minimal climate-change risk exposure to Ventas from these purchases), b) stakeholders (this is not deemed critical by our stakeholders), and c) influence (Ventas has limited ability to meaningfully reduce the emissions from these purchases).

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

Not relevant, explanation provided

Metric tonnes CO2e**Emissions calculation methodology****Percentage of emissions calculated using data obtained from suppliers or value chain partners****Explanation**

Ventas owns real estate assets and does not purchase fuels outside of those accounted for in its scope 1 and 2 emissions.

Upstream transportation and distribution**Evaluation status**

Not relevant, explanation provided

Metric tonnes CO2e**Emissions calculation methodology****Percentage of emissions calculated using data obtained from suppliers or value chain partners****Explanation**

These emissions are not relevant to Ventas's Scope 3 emissions due to several factors, including: a) risk (there is minimal climate-change risk exposure to Ventas from these activities), b) stakeholders (this is not deemed critical by our stakeholders), and c) influence (Ventas has limited ability to meaningfully reduce the emissions from these purchases).

Waste generated in operations

Evaluation status

Relevant, calculated

Metric tonnes CO2e

19757.62

Emissions calculation methodology

Utilized the waste reduction model (WARM), New Model Version 14 (<http://epa.gov/epawaste/conserves/tools/warm>). For our portfolio landfill waste of 59,602.41 metric tonnes, the Scope 3 emissions were calculated using the mixed solid waste (MSW), Mixed Organics, and Mixed Recyclable categories. The Scope 3 emissions were 19,757.62 metric tonnes CO2e.

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

100

Explanation

This is waste generated within our real estate portfolio. It does not include corporate waste, which is insignificant and therefore not calculated.

Business travel

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

332.16

Emissions calculation methodology

We used flight and automobile transit information on actual and estimated distances traveled and used the GHG Protocols standard and EPA emission factors to calculate total emissions. Flights were categorized as a short, medium, or long haul trip and estimate the amount of fuel burned per mile of the trip based on a carbon emission factor provided by the EPA. Automobile travel was calculated by using the EPA business travel emission factor of Kg CO2e/mile traveled. We calculated these emissions in accordance to the GHG Protocol's Technical Guidance on calculation Scope 3 emissions.

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

100

Explanation

These are emissions from Ventas corporate business travel (rental cars and plane flights). Emissions are not relevant to Ventas's Scope 3 emissions due to several factors, including: a) size (less than 1% of our overall carbon footprint), b) risk (there is minimal climate-change risk exposure to Ventas from these activities and c) stakeholders (this is not deemed critical by our stakeholders).

Employee commuting

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

8.16

Emissions calculation methodology

Ventas surveyed all corporate employees in 2015, requesting commuting information including type of transportation most commonly utilized, distance and frequency. Daily commuting habits were then extrapolated across a full year, adjusting for holidays and PTO, increasing YoY for 2016. Total commuter miles were calculated for personal car, train, bike, walking, bus and carpool. CO2e emissions were then calculated using the Greenhouse Gas Protocol Initiative GHG emissions from transport or mobile sources, Version 2.5, June 2013. We used the extrapolation from last year (7.87MT CO2e with 472 FTE's) and applied this GHG intensity to the 2017 FTEs of 489 to get total MT CO2e for 2017.

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

Explanation

Employee commuting-related emissions are not relevant to Ventas's Scope 3 emissions due to several factors, including: a) size (less than 1% of our overall carbon footprint), b) risk (there is minimal climate-change risk exposure to Ventas from these activities and c) stakeholders (this is not deemed critical by our stakeholders).

Upstream leased assets

Evaluation status

Not relevant, calculated

Metric tonnes CO2e

224.71

Emissions calculation methodology

Emissions from LEED certified leased office spaces in Chicago, IL and Louisville, KY were calculated using actual utility bills from the property team and translated into greenhouse gas emissions using the EPA eGRID 2016 data set

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

100

Explanation

Emissions from Ventas's two LEED-certified corporate offices in Chicago, IL and Louisville, KY. These emissions are not relevant to Ventas's Scope 3 emissions due to several factors, including: a) size (less than 1% of our overall carbon footprint), b) risk (there is minimal climate-change risk exposure to Ventas from these activities and c) stakeholders (this is not deemed critical by our stakeholders).

Downstream transportation and distribution

Evaluation status

Relevant, calculated

Metric tonnes CO2e

3382.8

Emissions calculation methodology

Includes emissions from vehicles operated in our senior housing operating portfolio to transport residents to local activities. Vehicle emissions are calculated based on miles driven or fuel consumed by vehicle. Ventas uses the World Resources Institute (2015) GHG Protocol tool for mobile combustion tool Version 2.6 to calculate the total GHG Impact for 2017. Calculations are in accordance with the methodology of GHG Protocol's Technical Guidance on calculation Scope 3 emissions.

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

Explanation

In Ventas's senior housing operating portfolio (SHOP) the third-party operators of these properties maintain vehicle fleets for transportation of the residents in these buildings. Emissions from these vehicle fleets are included here. Ventas also owns seniors housing communities under NNN-lease arrangements which may have vehicle fleets, but these properties are outside of Ventas's operational control boundary, so they are not part of Ventas emissions.

Processing of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Ventas owns real estate assets and does not produce products that require processing for sale.

Use of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Ventas owns real estate assets and does not sell products that generate scope 3 emissions.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

Ventas owns real estate assets and does not have products that require end of life treatment.

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

Explanation

Downstream leased assets

Evaluation status

Relevant, calculated

Metric tonnes CO2e

60492.45

Emissions calculation methodology

GHG Protocol: Technical Guidance for Calculating Scope 3 Emissions. Emission factors and methodology align with Scope 1 and 2 Reporting.

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

100

Explanation

Emissions from Electricity and Fuel for indirectly managed assets not under operational control. This includes assets that are owned by Ventas but where Ventas does not have operational control for climate change impacts, such as NNN-leased assets and assets where utilities are provided via a shared services agreement.

Franchises

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Ventas does not franchise.

Investments

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

Ventas investments are in real estate assets; emissions from these assets are included in our scope 1, scope 2, and scope 3 emissions (under the relevant scope 3 activity).

Other (upstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

None identified.

Other (downstream)

Evaluation status

Not relevant, explanation provided

Metric tonnes CO2e

Emissions calculation methodology

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

Explanation

None identified.

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

0.000190285

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

441163.79

Metric denominator

unit total revenue

Metric denominator: Unit total

2318434806.22

Scope 2 figure used

Location-based

% change from previous year

8.29

Direction of change

Decreased

Reason for change

In order to reduce emissions, a total of 1,237 energy efficiency projects were implemented across multiple properties. This included insulation, process optimization, HVAC, and lighting improvement projects. With a total investment of \$20,994,366.95 for the above mentioned projects, Ventas achieved a reduction in electricity use of 35,873,012.18 kWh, this is reflected in the reduction in emissions intensities between the two years.

Intensity figure

0.010372361

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

441163.7

Metric denominator

square foot

Metric denominator: Unit total

42532628

Scope 2 figure used

Location-based

% change from previous year

4.9

Direction of change

Decreased

Reason for change

In order to reduce emissions, a total of 1,237 energy efficiency projects were implemented across multiple properties. This included insulation, process optimization, HVAC, and lighting improvement projects. With a total investment of \$20,994,366.95 for the above mentioned projects, Ventas achieved a reduction in electricity use of 35,873,012.18 kWh, this is reflected in the reduction in emissions intensities between the two years.

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	77423.47	IPCC Fifth Assessment Report (AR5 – 100 year)
CH4	40.85	IPCC Fifth Assessment Report (AR5 – 100 year)
N2O	38.67	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)
Canada	13503.88
United States of America	63999.11

C7.3

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

By business division

C7.3a

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

Business division	Scope 1 emissions (metric ton CO2e)
Life Sciences	7640.21
Medical Office	20701.84
Senior Housing	49160.94

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)
Canada	8457.4		55604.23	
United States of America	355203.38		835383.29	

C7.6

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

By business division

C7.6a

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

Business division	Scope 2, location-based emissions (metric tons CO2e)	Scope 2, market-based emissions (metric tons CO2e)
Life Science	53507.36	
Medical Office	168895.75	
Seniors Housing	141257.67	

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		<Not Applicable>		
Other emissions reduction activities	26698	Decreased	5.92	Ventas implemented 1,237 projects which include 2017 projects that were currently implemented and yielding ongoing reductions. Last year, 26,698 metric tonnes CO2e were reduced by our emissions reduction activities, and our total Scope 1 and Scope 2 emissions in the previous year, therefore we arrived at % using the calculation: $(26698/451,204.01) \times 100 = 5.92\%$
Divestment		<Not Applicable>		
Acquisitions	6422.05	Increased	1.42	Ventas acquired 7 assets in 2017. When the impact is compared to the total reported Scope 1 and 2 reported in the previous reporting year, this equates to a 1.22% increase in emissions $(6,422.05/451,204.01 \times 100 = 1.42\%)$
Mergers		<Not Applicable>		
Change in output		<Not Applicable>		
Change in methodology		<Not Applicable>		See Restatement
Change in boundary		<Not Applicable>		See Restatement
Change in physical operating conditions		<Not Applicable>		
Unidentified	5019.71	Decreased	1.11	Equation: $26,698 + 6,422.05 - 29,097.15 + 5216.02 + \text{"Unidentified"} (- 5,019.71) = -15,067.97$. -15,067.97 is the change between the 2016 restated value and the 2017 data reported this year.
Other	5216.02	Increased	1.16	We use the geolocation of nearby weather stations and the asset zip codes to arrive at a total degree days per asset. There was a total decrease of 3.5% in total degree days between 2016 and 2017 which resulted in an overall GHG intensity decrease of 1.18% (5216 CO2e metric tonnes) between 2016 and 2017. Thus reported 2017 had a 1.16% GHG increase impact as compared to 2016. Equation: $\text{GHG increase (metric tonnes)} / 2016 \text{ Actual CO2e metric tonnes} = 1.16\% = 5216/451,204.01$

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 15% but less than or equal to 20%

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	No
Generation of electricity, heat, steam, or cooling	Yes

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	427657.79	427657.79
Consumption of purchased or acquired electricity	<Not Applicable>	0	885428.61	885428.61
Consumption of purchased or acquired heat	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired steam	<Not Applicable>	0	5379.56	5379.56
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	179.35	<Not Applicable>	179.35
Total energy consumption	<Not Applicable>	179.35	1318465.97	1318645.32

C8.2b

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

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of steam	No
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

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

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

427657.79

MWh fuel consumed for the self-generation of electricity

<Not Applicable>

MWh fuel consumed for self-generation of heat

<Not Applicable>

MWh fuel consumed for self-generation of steam

<Not Applicable>

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self-cogeneration or self-trigeneration

<Not Applicable>

C8.2d

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

Natural Gas

Emission factor

53.06

Unit

kg CO2 per million Btu

Emission factor source

Source: https://www.epa.gov/sites/production/files/2016-09/documents/emission-factors_nov_2015_v2.pdf

Comment

The above emission factor is for 'Natural Gas'. The emission factor is derived from the United States Environmental Protection Agency's Center for Corporate Climate Leadership GHG Emission Factors Hub. Source:

https://www.epa.gov/sites/production/files/2016-09/documents/emission-factors_nov_2015_v2.pdf

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	179.35	179.35	179.35	179.35
Heat	0	0	0	0
Steam	0	0	0	0
Cooling	0	0	0	0

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.

Basis for applying a low-carbon emission factor

No purchases or generation of low-carbon electricity, heat, steam or cooling accounted with a low-carbon emission factor

Low-carbon technology type

<Not Applicable>

MWh consumed associated with low-carbon electricity, heat, steam or cooling

<Not Applicable>

Emission factor (in units of metric tons CO2e per MWh)

<Not Applicable>

Comment

C9. Additional metrics

C9.1

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

Description

Waste

Metric value

Metric numerator

Metric denominator (intensity metric only)

% change from previous year

Direction of change

<Not Applicable>

Please explain

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

Complete

Type of verification or assurance

Moderate assurance

Attach the statement

Goby Verification Doc - CDP.pdf

Page/ section reference

Process described on pages 1-4 and 7; Scope 1 numbers assured are on page 5.

Relevant standard

The Climate Registry's General Verification Protocol

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

Complete

Type of verification or assurance

Moderate assurance

Attach the statement

Goby Verification Doc - CDP.pdf

Page/ section reference

Process described on pages 1-4 and 7; Scope 2 numbers assured are on page 5.

Relevant standard

The Climate Registry's General Verification Protocol

Proportion of reported emissions verified (%)

100

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

Complete

Attach the statement

Goby Verification Doc - CDP.pdf

Page/section reference

Process described on pages 1-4 and 7; Scope 3 numbers assured are on page 6. This process was carried out for the 'Downstream Leased Assets' category.

Relevant standard

The Climate Registry's General Verification Protocol

C10.2

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

Yes

C10.2a

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

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C6. Emissions data	Year on year change in emissions (Scope 2)	The Climate Registry's General Verification Protocol	As a part of Ventas's partnership with Goby Inc. year on year change in emissions is analyzed for Scope 2 emissions. GHG Emissions Calculation: The GHG emissions calculation methodology is as described on pages 1-4 and 7; the emissions numbers are on page 6. Goby Verification Doc - CDP.pdf
C6. Emissions data	Year on year emissions intensity figure	The Climate Registry's General Verification Protocol	Goby Inc. calculates emissions intensities for the Ventas portfolio using occupied gross square footage, and revenue. GHG Emissions Calculation: The GHG emissions calculation methodology is as described on pages 1-4 and 7; the emissions numbers are on page 6. Goby Verification Doc - CDP.pdf
C4. Targets and performance	Progress against emissions reduction target	The Climate Registry's General Verification Protocol	Goby Inc. calculates Ventas's progress against its 10-year emissions reduction targets (and corresponding annual targets). GHG Emissions Calculation: The GHG emissions calculation methodology is as described on pages 1-4 and 7; the emissions numbers are on page 6. Goby Verification Doc - CDP.pdf
C6. Emissions data	Year on year change in emissions (Scope 1)	The Climate Registry's General Verification Protocol	As a part of Ventas's partnership with Goby Inc. year on year change in emissions is analyzed for Scope 1 emissions. GHG Emissions Calculation: The GHG emissions calculation methodology is as described on pages 1-4 and 7; the emissions numbers are on page 6. Goby Verification Doc - CDP.pdf

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?
No, and we do not anticipate being regulated in the next three years

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?
No

C11.3

(C11.3) Does your organization use an internal price on carbon?
No, and we do not currently anticipate doing so in the next two years

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
Yes, our suppliers
Yes, our customers

C12.1a

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

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

1

% total procurement spend (direct and indirect)

15

% Scope 3 emissions as reported in C6.5

10

Rationale for the coverage of your engagement

Ventas engages with its national contract vendors on climate related issues. These suppliers have the resources and reporting capabilities to provide Ventas with meaningful data and information related to climate impacts. As we continue to consolidate our spend toward these vendors, our spend coverage will increase.

Impact of engagement, including measures of success

Ventas seeks to engage with its suppliers and vendors to reduce the climate change impacts from its operations (over which inputs from our suppliers have influence). We work with our suppliers to understand the carbon emissions of the products they provide to Ventas, and to identify alternatives that have lower carbon emissions while maintaining price and quality. We currently measure our success by tracking the percent of our procurement spend on environmentally sustainable (including low-carbon) products, where such options are available. We look at the year-over-year change and seek to increase it.

Comment

C12.1b

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

Type of engagement

Collaboration & innovation

Details of engagement

Other – please provide information in column 5

Size of engagement

60

% Scope 3 emissions as reported in C6.5

90

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

Ventas customers primarily include independent operators of our senior housing communities, medical office buildings, life science and innovation centers, and other healthcare properties. Ventas engages with about 60% of these customers (based on total owned property square feet) on multiple climate-related initiatives. We primarily engage with our top operators because they operate several of our buildings and we can impact larger portions of our portfolio. We also have deeper relationships with these customers that allow us to collaborate on climate change issues.

Impact of engagement, including measures of success

With our customers, we collaborate and innovate on climate-related initiatives such as evaluating new building technologies that decrease carbon emissions. Examples include battery storage and Internet of Things (IoT) technologies that enable sophisticated analytics on building energy use to improve energy efficiency. We measure the success of these initiatives by the combination of strong financial returns, energy consumption savings, and emissions reductions.

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?

Trade associations

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

Nareit

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Nareit, the National Association of Real Estate Investment Trusts®, is the worldwide representative voice for REITs, or Real Estate Investment Trusts, and publicly traded real estate companies with an interest in U.S. real estate and capital markets. Nareit supports and seeks to maximize the ESG efforts and leadership of its members. REITPAC and Nareit also support legislation that encourages energy-efficient real estate and emission reductions. Most recently, Nareit collaborated with several real estate organizations to lobby Congress to prevent the Trump Administration's proposed cuts to the U.S. Environmental Protection Agency's (EPA) ENERGY STAR® program. These efforts were successful in preventing cuts in the 2017 fiscal year (through September 2017). Efforts continue with a focus on preventing cuts for FY 2018. REITPAC has also engaged members of Congress to advocate support for the Commercial Building Modernization Act ("CBMA") and Section 179D of the Internal Revenue Code, both in an effort to promote energy-efficient retrofits and broaden incentive language to be more accessible for real estate investment trusts.

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

Ventas is proactively engaged with Nareit and REITPAC. Annually, Ventas solicits voluntary contributions from employees to support Nareit legislative agendas. Throughout the year, Ventas participates in and leads discussions at Nareit events, including the ESG Forum which provides Nareit corporate members the opportunity to take an active role in advancing sustainability leadership for REITs. Ventas's Director of Sustainability is also an active participant on the Nareit Real Estate Sustainability Committee (RESC).

Trade association

ULI

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The Urban Land Institute (ULI) provides leadership in the responsible use of land and in creating and sustaining thriving communities worldwide. ULI is an independent global non-profit supported by members representing the entire spectrum of real estate development and land use disciplines. The ULI Center for Sustainability and Economic Performance is dedicated to creating healthy, resilient, and high performance communities around the world. The three programs within the Center are the ULI Greenprint Center for Building Performance, Tenant Energy Optimization Program, and the Urban Resilience Program. The ULI Greenprint Center for Building Performance is a catalyst for change, taking meaningful, immediate, and measurable actions to generate real estate solutions that improve the environment through energy efficiency while demonstrating the correlation with increased property values. The Tenant Energy Optimization Program is a proven, replicable approach that integrates energy efficiency into tenant space design and construction and delivers excellent financial returns through energy conservation. The process emphasizes the importance of collaboration between tenants, building owners, and service providers. The Urban Resilience Program looks at how cities can prepare for the expected effects of climate change. From rising sea levels to more frequent storm events to extended droughts, the changing climate poses short- and long-term risks and opportunities for urban planning and development. The Urban Resilience program provides resources and strategies to mitigate those risks and to create a more resilient and durable vision for community development.

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

Several Ventas employees are members of the Urban Land Institute and two employees are on ULI National Product Councils (the Senior Housing Council and Health Care and Life Sciences Council). One way Ventas keeps apprised of new technologies, rising trends and sustainability benchmarking tools in the real estate industry is via strong employee engagement in ULI events and councils.

Trade association

Real Estate Roundtable

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

Roundtable supports ENERGY STAR: voluntary federal program, no EPA mandates. » Est. in 1990s: Building owners/managers can "label" CRE assets to signal top energy performance for investors, tenants. » 44 billion sq. ft. of U.S. commercial floor space use ENERGY STAR's free, online tool to measure energy, water, waste in buildings, across portfolios. "Business case" for ENERGY STAR: Creates jobs, enhances competitiveness, improves energy independence, saves money for U.S. families, businesses on utility bills. Key change in Trump Admin's support: Proposed FY 19' budget (released in February) continued funding for ENERGY STAR. Last year's budget proposed de-funding. Congress appropriated dollars to fund ENERGY STAR through Sept. 30, 2018 (via omnibus spending bill passed in March). Trump FY'19 budget recommends EPA explore supporting ENERGY STAR with "user fees" (as opposed to taxpayer dollars, congressional appropriations). No legislation, regulations yet proposed to move to a "user fee" funding model. Roundtable, other real estate groups, continue to advocate: EPA should receive adequate, sustained funding to continue the program. Keep status quo for ENERGY STAR buildings, even if appliance-side of label program needs reforms. EPA (not Energy Dep't) should continue managing ENERGY STAR buildings, as it has done for almost two decades.

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

The Ventas Director of Sustainability participates in the Roundtable's Sustainability Policy Advisory Committee (SPAC).

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?

The Ventas ESG Steering Committee is sponsored by our Chairman & CEO, and includes our Director of Sustainability, VP Investments, SVP Asset Management (Lillibridge), and VP Marketing & Communications. With a diverse committee make-up, and our most senior executive, this committee ensures that policy activities are consistent with Ventas' overall climate change strategy. ESG Committee meetings, which occur at least quarterly, include discussion (as needed) on climate policy activities, which are primarily carried out by our Director of Sustainability. This forum for regular communication among those involved in activities that influence policy on climate change ensures consistency with our overall climate change strategy.

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 voluntary communications

Status

Complete

Attach the document

GRESB 2018_Final.pdf

Content elements

Governance

Strategy

Emissions figures

Emission targets

Other metrics

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	Director, Sustainability	Environment/Sustainability manager

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	Public or Non-Public Submission	I am submitting to
I am submitting my response	Public	Investors

Please confirm below

I have read and accept the applicable Terms