



Verification Report – Ventas Inaugural Corporate Sustainability Report

Goby, Inc. is in a contractual agreement with Ventas, Inc. to collect and compile the necessary data required to provide the GHG calculations and energy, water, and waste consumption that support the environmental data reported in Ventas's second Corporate Sustainability Report (CSR), published in October 2019 and covering environmental data for calendar years 2016-2018. The consumption data was collected from invoices and third party utility data providers for water, waste, electricity, natural gas and other major CO2 emitting fuels.

Responsibilities of Ventas and the Verification Provider

The management of Ventas has primary responsibility for the preparation and content of its CSR. Goby's statement represents its independent opinion on the content and accuracy of the information and environmental data within.

Goby's Data Collection Process

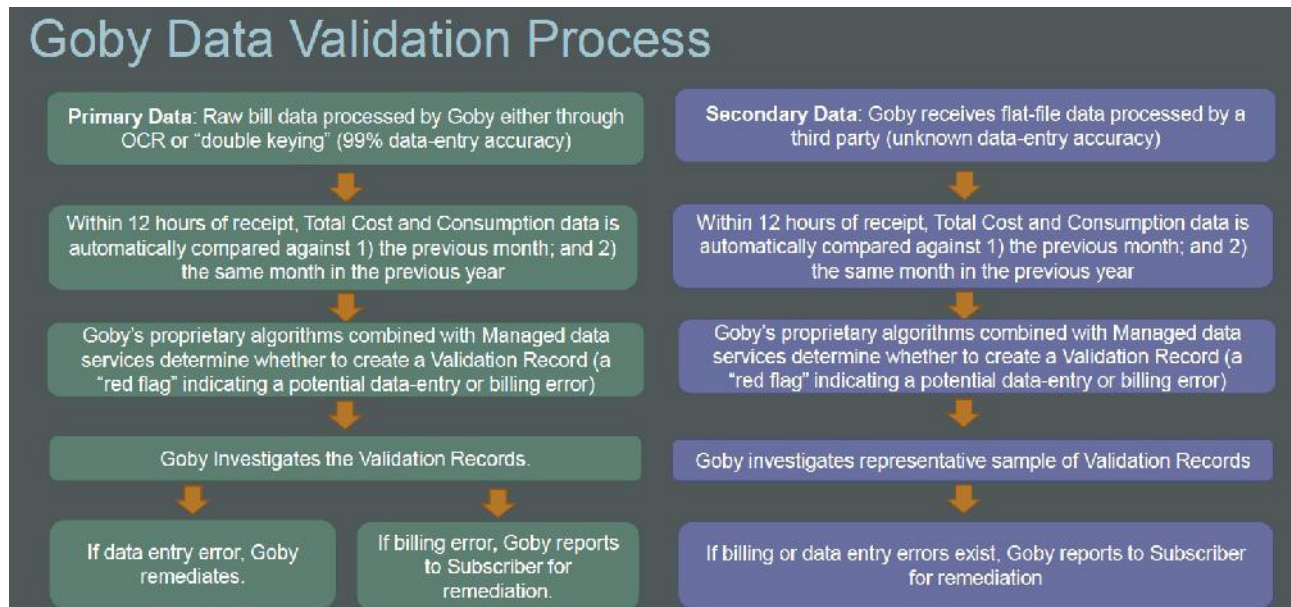
The following processes were utilized to collect and compile the data for the CSR covering calendar years 2016-2018:

- Consumption data was provided to Goby directly from third-party energy suppliers and utility companies in the format of either an invoice, flat file, or other raw consumption data to be reviewed, analyzed, and validated into Goby's data management system. Each invoice was validated for accuracy by identifying any discrepancies and outliers prior to inputting in the Goby platform.
- After all data was inputted into the Goby platform, a missing data and data validation report was provided to Ventas for review to provide any additional data or clarifications. After all data was confirmed, the greenhouse gases were then calculated using The Climate Registry General Verification Version 2.1 (Released June 2014) standard.
- All relevant data is exported from the Goby platform to be broken down by each scope of GHG emissions, as applicable. The data was further verified by Goby teams to address any changes in property type and number of facilities.
- On a monthly basis, Goby updated utility data and property data as available for each property.
- On a monthly basis, Goby pulled the monthly average temperature for weather normalization from NOAA based on local zip code.
- Goby performs quality assurance tracking for reporting errors and large outliers in data.
- Data and utility invoices are pulled automatically into Goby via sites' online utility accounts, where available, and manually loaded utility data from bills where online logins are not available.
- All invoices provided to Goby, either directly from Ventas or via online utility accounts, are stored in a cloud-based file sharing program as a document repository.



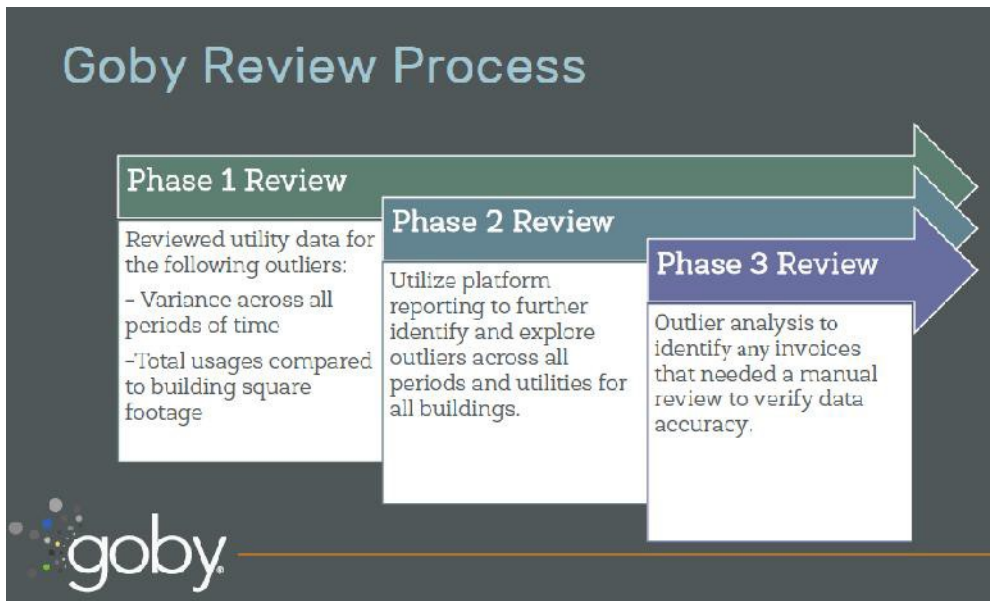
Data Validation Process and Methodology

Below is a flow chart of the Goby Data Validation Process for how primary and secondary data are reviewed.



All utility data in the Goby platform is assessed based on the below validation rules. If any data is above or below the listed Error Type's then a flag is generated within the platform and a Goby Team member responds to that item. Data is reviewed based on various Interval periods to assess for potential errors.

Goby Platform Automated Validations			
Validation Rule	Error Type	Interval	Utility Type(s)
<ul style="list-style-type: none"> Average Consumption per Day per Meter (if meter level data available) Average Consumption per Day per Building (if meter level data unavailable) 	Exceeds Threshold Percentage Change (+/-)	<ul style="list-style-type: none"> Current Billing Period vs. Previous Billing Period Current Billing Period vs. Same Billing Period Last Year 	<ul style="list-style-type: none"> Energy Water Waste
Total Cost Per Bill	Exceeds Threshold Percentage Change (+/-)	<ul style="list-style-type: none"> Current Billing Period vs. Previous Billing Period Current Billing Period vs. Same Billing Period Last Year 	<ul style="list-style-type: none"> Energy Water Waste
<ul style="list-style-type: none"> Average Cost per Day per Meter (if meter level data available) Average Cost per Day per Building (if meter level data unavailable) 	Exceeds Threshold Percentage Change (+/-)	<ul style="list-style-type: none"> Current Billing Period vs. Previous Billing Period Current Billing Period vs. Same Billing Period Last Year 	<ul style="list-style-type: none"> Energy Water Waste



Stages of the Goby Platform



HISTORICAL

Historical Data Load
QA Spot Check

The Goby team will load historical utility data and monthly bills from either paper bills, utility logins, or other preferred systems in a **seamless data transfer**. This data will be saved in a central location and easily accessed from SeaSuite reports.



CONFIG

Data Configuration

SeaSuite **connects directly to utility providers** to pull data in automatically every month, removing burden and creating a painless setup process. Meter configurations will be unique to each property's specifications.



LAUNCH

Client Access

A **customized communication strategy** will be utilized to launch the platform as "live" to both executive level and property level teams. This strategy will onboard users with pragmatic training and support, including live webinars and in-person presentations.



ONGOING

Active

Our expert and **dedicated team** ensure ongoing support. This includes: ongoing meetings, data quality review, turn-key services, normalized and comparative reporting, utility bill management, etc.



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Goby has a high level of confidence with respect to the reported data. The consumption data was collected directly from the professional utility providers and input into our data management system. Once the data is extracted by the operators, Goby utilizes a separate process to automatically upload the data. Goby's validation process then begins by ensuring that the data that was provided by the operators and utility providers corresponds with what is in the Goby platform. The entry and validation process is both electronic and manual to insure greater accuracy. All data points are validated for outliers and discrepancies.

All GHG calculations are performed by Goby using the consumption data provided by the operators. Goby runs all the data through a manual recheck once exported from the platform to ensure there are no major outliers that could potentially misinterpret the data. Goby also uses the GHG Protocol to evaluate Ventas's specified environmental performance information and its adherence to the principles.

The loading of data and calculating of GHG emissions are overseen by Ashley Dauksas, Vice President of Data and Jason Franken, Director of Consulting.

ISO 14001 Alignment

The Goby processes described here are aligned with the four stages of ISO 14001. See Appendix B for details.

Scope and Limitations

The environmental data provided in Ventas's CSR covered a reporting period of January 1, 2016 – December 31, 2018. Greenhouse gas ("GHG") quantification is subject to inherent uncertainty due to such things as incomplete scientific knowledge and other factors, to precisely characterize the relationship between various inputs and the emission results. Energy use data used in GHG emissions calculations are subject to primary limitations, given the nature and the methods used for determining such data. The selection of different but acceptable measurement techniques may result in materially different measurements.

Based on our review, nothing came to our attention that caused us to believe that the selected sustainability metrics are not fairly stated.

Using the process outlined herein, Goby has assured Ventas's 2018 emissions and data points as specified in Appendix A. This represents 100% of the environmental data that Ventas has reported in the CSR.



Appendix A

ENVIRONMENTAL BOUNDARY PORTFOLIO CHARACTERISTICS - 2018

102-46: Defining Report Content and Topic Boundaries

For the purposes of this report, Ventas's environmental boundary includes the following properties per our 4Q 2018 Supplemental Report. The boundary excludes sold assets and Assets Intended for Disposition¹.

Portfolio Characteristics	Number of Properties	Square Feet
MOB	227	12,639,879
Seniors Housing	355	28,254,046
Research and Innovation	31	4,043,913
Total	613	44,937,838

GRI 302: ENERGY

302-1: Energy Consumption within the Organization

Total Fuel Consumption (MWh/GJ) ²	2016	2017	2018
Natural Gas (MWh)	447,621	450,091	461,328
Natural Gas (GJ)	1,611,436	1,620,327	1,660,781

302-3: Energy Intensity

Total Energy Consumption (MWh)	2016	2017	2018
Electricity	795,933	790,622	792,683
Heating	447,621	450,091	461,328
Cooling	N/A	N/A	N/A
Steam	N/A	N/A	N/A
Renewables ³	230	231	324
Total	1,243,783	1,240,944	1,254,335

¹ Assets Intended for Disposition: Properties that are included in discontinued operations, designated as held for sale, or for which there is an active intent to sell such properties.

² Natural Gas was the only source of fuel used in the 2016-2018 period.

³ None of the energy generated was sold.



Energy Consumption and Intensity by Property Type (MWh/ 1,000sf)	2016		2017		2018	
	MWh	MWh/ 1,000 sf	MWh	MWh/ 1,000 sf	MWh	MWh/ 1,000 sf
MOB	396,333	31.4	394,738	31.2	393,711	31.1
Seniors Housing	638,314	22.6	637,068	22.5	646,612	22.9
Research and Innovation ⁴	208,907	51.7	208,907	51.7	213,688	52.8
Total	1,243,554	27.7	1,240,713	27.6	1,254,011	27.9

Standards, methodologies, assumptions, and/or calculation tools used:

Energy data is aggregated primarily from utility bills. Ventas engages a third-party consultant with expertise in utility data aggregation and environmental impact analysis; the process is aligned with ISO 14001.

For properties where partial or no utility data can be obtained, we make estimates as follows:

- a) For properties with one or more full reporting years of data and one or more years of missing data: The full year data for that property is used as an estimate for any missing year(s). In 2016, 2017 and 2018, 22%, 13% and 0.1% of the energy data was estimated this way, respectively (based on total square footage of the portfolio).
- b) For properties with no full year of data in any year: The energy intensity per square foot for the property type in the respective calendar year is used to estimate the consumption. Energy intensity is calculated by summing the total energy consumption for the property type in the calendar year and dividing by the total square feet for the property type. In 2016, 2017 and 2018, 1%, 1% and 3% of the energy data was estimated this way, respectively (based on total square footage of the portfolio).

Source of the conversion factors used:

EPA Thermal Conversions: <https://portfoliomanager.energystar.gov/pdf/reference/Thermal%20Conversions.pdf>

⁴ The Research and Innovation assets were acquired in late 2016. 2017 Research and Innovation data is used as an estimate for 2016 in order to show a like-for-like trend for the overall portfolio.



GRI 305: EMISSIONS

Disclosure 305-1 Direct (Scope 1) GHG emissions

Disclosure 305-2: Energy indirect (Scope 2) GHG emissions

2018

Property Type	Direct (Scope 1 MTCO ₂ e)	Indirect (Scope 2, Location-based MTCO ₂ e) ⁵	Total (MTCO ₂ e)	GHG Emissions Intensity (MTCO ₂ e/ 1,000 sq ft)
MOB	18,535	138,426	156,961	12.4
Seniors Housing	51,689	136,744	188,432	6.7
Research and Innovation	13,557	50,179	63,737	15.8
Total	83,781	325,349	409,131	9.1

2017

Property Type	Direct (Scope 1 MTCO ₂ e)	Indirect (Scope 2, Location-based MTCO ₂ e) ⁷	Total (MTCO ₂ e)	GHG Emissions Intensity (MTCO ₂ e/ 1,000 sq ft)
MOB	18,605	138,497	157,102	12.4
Seniors Housing	50,129	136,117	186,245	6.6
Research and Innovation	12,995	50,055	63,050	15.6
Total	81,729	324,668	406,397	9.0

2016

Property Type	Direct (Scope 1 MTCO ₂ e)	Indirect (Scope 2, Location-based MTCO ₂ e)	Total (MTCO ₂ e)	GHG Emissions Intensity (MTCO ₂ e/ 1,000 sq ft)
MOB	18,584	139,052	157,635	12.5
Seniors Housing	49,681	138,016	187,698	6.6
Research and Innovation	12,995	50,055	63,050	15.6
Total	81,260	327,122	408,383	9.1

⁵ Market-based Scope 2 emissions were not assessed for this reporting cycle.



Gases included in the calculation; whether CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃, or all.

Emissions from CO₂, CH₄ and N₂O are included herein. Emissions from HFCs are not included due to lack of data. Emissions from PFCs, SF₆ and NF₃ primarily result from manufacturing and other activities that do not occur in the Ventas portfolio and are therefore not included.

Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source.

- Electricity (US) – EPA eGRID 2016 (2018)
- Electricity (Canada) – IEA 2017 (2018)
- Natural Gas/District Steam - EPA Emission Factors for Greenhouse Gas Inventories (2018)
- Global Warming Potential - IPCC Fifth Assessment Report, 2014 (AR5)

Standards, methodologies, assumptions, and/or calculation tools used:

Scope 1 Emissions: Methodology aligns with the “The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)”; Using actual and estimated data, a total emission impact is calculated using EPA Emission Factors for Greenhouse Gas Inventories (2018). Ventas’s third-party consultant uses a calculation tool in their cloud-based platform to convert the energy usage to a Scope 1 greenhouse gas impact.

Scope 2 Emissions: Methodology aligns with the “The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)”; Using actual and estimated data, a total emission impact is calculated using EPA eGRID 2016 (United States) and IEA 2017 (International) emission factors to result in a total MTCO₂e for Scope 2 Emissions from electricity. Ventas’s third-party consultant uses a calculation tool in their cloud-based platform to convert the energy usage to a location-based greenhouse gas impact.

305-3: Other indirect (Scope 3) GHG emissions (MTCO₂e)

Other Indirect (Scope 3) GHG Emissions Categories and Activities Included in the Calculation	2016	2017	2018
Employee commuting	372	386	392
Business travel	411	608	730
Waste	21,459	23,136	22,610
Upstream leased assets	301	225	648
Downstream transportation and distribution	3,383	3,383	4,185
Downstream Leased Assets	356,689	353,469	356,462
Gross Scope 3 GHG Emissions ⁶	382,615	381,207	385,027

Gases included in the calculation; whether CO₂, CH₄, N₂O, HFCs, PFCs, SF₆, NF₃, or all.

Emissions from CO₂, CH₄ and N₂O are included herein. Emissions from HFCs are not included due to lack of data. Emissions from PFCs, SF₆ and NF₃ primarily result from manufacturing and other activities that do not occur in the Ventas portfolio and are therefore not included.

Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source.

⁶ Ventas has no Biogenic CO₂ emissions.



- Electricity - EPA eGRID 2016, IEA 2017; District Heating and Cooling/Business travel/Employee Commuting - EPA Emission Factors for Greenhouse Gas Inventories (2018); Global Warming Potential - IPCC Fifth Assessment Report, 2014 (AR5)

Standards, methodologies, assumptions, and/or calculation tools used:

- Corporate Value Chain (Scope 3) Standard | (Supplement to the GHG Protocol Corporate Accounting and Reporting Standard)
- Upstream/Downstream Leased Assets: Chicago and Louisville Corporate offices (Upstream) and owned assets outside of our environmental boundary (Downstream) are using the same calculation methodology as Scope 1 and 2 emission calculations.
- Waste data represents the disposal of actual and estimated waste within the environmental boundary using the Waste Reduction Model (WARM), New Model Version 15 (<http://epa.gov/epawaste/conserve/tools/warm>).
- Business Travel - GHG Protocol Calculation Methodology. Based on Ventas business flight data provided by travel agency through which all flights are booked.
- Employee Commuting - 2016 and 2017 data was estimated based on FTE at Ventas. The 2018 data was calculated based on a survey of employee commuting patterns and the GHG Protocol Mobile Combustion tool.
- Downstream transportation and distribution – Estimated leased vehicle emissions from transport fuel from SHOP assets. 2016 data was backfilled using 2017 data. The 2017 and 2018 emissions are calculated using the GHG Protocol Mobile Combustion tool.

GRI 303: WATER

303-1: Water Withdrawal by Source

Total Water Consumption (Cubic Meters) ⁷	2016	2017	2018
MOB	1,465,763	1,411,046	1,417,978
Seniors Housing	5,106,524	4,988,041	4,998,942
Research and Innovation	414,415	421,112	434,588
Total	6,986,702	6,820,199	6,851,507

Total Water Consumption Intensity (Cubic Meters/1,000 SF)	2016	2017	2018
MOB	116.0	111.6	112.2
Seniors Housing	180.7	176.5	176.9
Research and Innovation	102.5	104.1	107.5
Total	155.5	151.8	152.5

Standards, methodologies, assumptions, and/or calculation tools used:

Water data is aggregated primarily from utility bills. Ventas engages a third-party consultant with expertise in utility data aggregation and environmental impact analysis; the process is aligned with ISO 14001.

For properties where partial or no utility data can be obtained, we make estimates as follows:

- For properties with one or more full reporting years of data and one or more years of missing data: The full year data for that property is used as an estimate for any missing year(s). In 2016, 2017 and 2018, 19%, 13%

⁷ 100% of the water withdrawn by Ventas comes from Municipal sources. We did not source water from surface water, ground water, rainwater or waste water.



and 2% of the water data was estimated this way, respectively (based on total square footage of the portfolio).

For properties with no full year of data in any year: The water intensity per square foot for the property type in the respective calendar year is used to estimate the consumption. Water intensity is calculated by summing the total water consumption for the property type in the calendar year and dividing by the total square feet for the property type. In 2016, 2017 and 2018, 14% of the water data was estimated this way (based on total square footage of the portfolio).

GRI 306: EFFLUENTS AND WASTE

306-2: Waste by type and disposal method

Total weight of waste

Total Weight of Waste (MT)	2016	2017	2018
Total non-hazardous waste (all disposal methods)	69,445	74,792	72,238
Total hazardous waste	0	0	0

Total weight of non-hazardous waste, with a breakdown by the following disposal methods where applicable:

Total Waste by Disposal Method (MT)	2016	2017	2018
Recycling	9,169	9,966	9,518
Compost	35	58	82
Landfill	60,075	64,768	62,638
Other	0	0	0
Total	69,445	74,792	72,238
Diversion Rate	13%	13%	13%

Standards, methodologies, assumptions, and/or calculation tools used:

Waste data is aggregated primarily from waste hauler invoices. Ventas engages a third-party consultant with expertise in utility data aggregation and environmental impact analysis; the process is aligned with ISO 14001. In cases where volumetric data was provided instead of weight data, the following volume-weight conversion factors were used: [EPA Standard volume-to-weight conversion factors](#).

If actual waste tonnage or volume is available from the waste hauler invoice or other reliable source, that is reflected in our waste data. For most properties, waste amounts are estimated based on the number and size of waste containers that are picked-up by the waste hauler (based on the hauler invoice). For data collection and reporting purposes, it is assumed that containers are full, and contain an average weight per cubic yard. This is a standard practice for estimating waste from commercial real estate properties.

For properties where partial or no utility data can be obtained, we make estimates as follows:

- a) For properties with one or more full reporting years of data and one or more years of missing data: The full year data for that property is used as an estimate for any missing year(s). In 2016, 2017 and 2018, 12%, 8% and 1% of the waste data was estimated this way, respectively (based on total square footage of the portfolio).

For properties with no full year of data in any year: The waste intensity per square foot for the property type in the respective calendar year is used to estimate the consumption. Waste intensity is calculated by summing the total waste consumption for the property type in the calendar year and dividing by the total square feet for the property type. In 2016, 2017 and 2018, 27%, 29% and 30% of the waste data was estimated this way, respectively (based on total square footage of the portfolio).



Appendix B

ISO 14001: Plan-Do-Check-Act Alignment

Plan:

- Incorporate the Plan-Do-Check-Act model in setting environmental objectives to comply with legal and environmental sustainability certification, such as ENERGY STAR, LEED and city-benchmarking requirements
- Configure the Entity's sustainability projects within the Goby Platform
- Configure CDP tasks and association with users
- Perform up to 2 training sessions for the Entity's on the Goby Platform to cover necessary feature, functions, and access
- Provide program management and strategy for historical waste data collection and set up of ongoing tracking process
 - Goby will provide data entry services, where necessary

Do:

- Provide consulting services on energy efficiency, sustainability, ENERGY STAR, CDP and LEED for the Entity's environmental goals
 - Goby will conduct periodical meetings to strategize on energy efficiency, water consumption and waste production

Check:

- Analyze the Entity's portfolio environmental impact in terms of energy consumption, water use and waste generation for ENERGY STAR and city-wide benchmarking and environmental sustainability certification requirements
- Establish and monitor programs to meet environmental objectives

Act:

- Evaluate performance against targets
- Provide feedback and suggestions for improvement
- Relay information and provide guidance for the Entity's employee environmental awareness and competence
- Review the Entity's CDP, Sustainability and Community Modules through the Goby Platform with continuous modifications and improvements following the Plan-Do-Check-Act model

Please note the Goby EMS is aligned with the four stages of ISO 14001 EMS standards as indicated in the steps above.