Module: Introduction

Page: Introduction

CC0.1

Introduction
Please give a general description and introduction to your organization.

Our mission is to provide sustainable waste and energy solutions. We seek to do this through a variety of service offerings, including our core business of owning and operating infrastructure for the conversion of waste to energy (known as “energy-from-waste” or “EfW”).

Our EfW facilities earn revenue from both the disposal of waste and the generation of electricity, generally under long-term contracts, as well as from the sale of metals recovered during the EfW process. Our facilities process approximately 20 million tons of solid waste annually, equivalent to 7% of post-recycled municipal solid waste (“MSW”) generated in the United States. We operate and/or have ownership positions in 45 EfW facilities, which are primarily located in North America, and 11 additional energy generation facilities, including other renewable energy production facilities in North America (wood biomass and hydroelectric). In total, these assets produce approximately 10 million megawatt hours (“MWh”) of baseload electricity annually. We also operate waste management infrastructure, including 18 waste transfer stations, 12 environmental services facilities, 4 landfills (primarily for ash disposal) and one metals processing facility, all of which are complementary to our core EfW business.

Energy-from-waste serves two key markets as both a sustainable waste management solution that is environmentally superior to landfilling and as a source of clean energy that reduces overall greenhouse gas emissions. Energy-from-waste is considered renewable under the laws of many states and under federal law. Our facilities are critical infrastructure assets that allow our customers, which are principally municipal entities, to provide an essential public service through sustainable practices.

CC0.2

Reporting Year
Please state the start and end date of the year for which you are reporting data.

The current reporting year is the latest/most recent 12-month period for which data is reported. Enter the dates of this year first.
We request data for more than one reporting period for some emission accounting questions. Please provide data for the three years prior to the current reporting year if you have not provided this information before, or if this is the first time you have answered a CDP information request. (This does not apply if you have been offered and selected the option of answering the shorter questionnaire). If you are going to provide additional years of data, please give the dates of those reporting periods here. Work backwards from the most recent reporting year.
Please enter dates in following format: day(DD)/month(MM)/year(YYYY) (i.e. 31/01/2001).

Enter Periods that will be disclosed
Thu 01 Jan 2015 - Thu 31 Dec 2015

CC0.3

Country list configuration

Please select the countries for which you will be supplying data. If you are responding to the Electric Utilities module, this selection will be carried forward to assist you in completing your response.

Select country
United States of America
China
Italy
Canada

CC0.4

Currency selection

Please select the currency in which you would like to submit your response. All financial information contained in the response should be in this currency.

USD($)

CC0.6

Modules
As part of the request for information on behalf of investors, electric utilities, companies with electric utility activities or assets, companies in the automobile or auto component manufacture sub-industries, companies in the oil and gas sub-industries, companies in the information technology and telecommunications sectors and companies in the food, beverage and tobacco industry group should complete supplementary questions in addition to the main questionnaire.
If you are in these sector groupings (according to the Global Industry Classification Standard (GICS)), the corresponding sector modules will not appear below but will automatically appear in the navigation bar when you save this page. If you want to query your classification, please email respond@cdp.net.
If you have not been presented with a sector module that you consider would be appropriate for your company to answer, please select the module below. If you wish to view the questions first, please see https://www.cdp.net/en-US/Programmes/Pages/More-questionnaires.aspx.

Further Information

Module: Management

Page: CC1. Governance

CC1.1

Where is the highest level of direct responsibility for climate change within your organization?

Board or individual/sub-set of the Board or other committee appointed by the Board

CC1.1a

Please identify the position of the individual or name of the committee with this responsibility

Board Public Policy Committee

CC1.2

Do you provide incentives for the management of climate change issues, including the attainment of targets?

Yes

CC1.2a

Please provide further details on the incentives provided for the management of climate change issues

Who is entitled to benefit from these incentives?	The type of incentives	Incentivized performance indicator	Comment
Other: Environment/sustainability managers	Monetary reward		The company has assigned specific personnel to manage the company's progress and status regarding climate change and each of those individuals receives an annual bonus based on individual performance wherein their success in the area of climate change would be among the factors considered. Furthermore, specific individuals in the company are tasked with implementation of specific initiatives that, among other benefits, result in net GHG emissions reductions. These employees are also evaluated on their individual performance on these initiatives. These evaluations impact the employees' bonuses.

Further Information

Page: CC2. Strategy

CC2.1

Please select the option that best describes your risk management procedures with regard to climate change risks and opportunities

Integrated into multi-disciplinary company wide risk management processes

CC2.1a

Please provide further details on your risk management procedures with regard to climate change risks and opportunities

Frequency of monitoring	To whom are results reported?	Geographical areas considered	How far into the future are risks considered?	Comment
Annually		Global	1 to 3 years	

CC2.1b

Please describe how your risk and opportunity identification processes are applied at both company and asset level

Covanta is unique in that our primary business, EfW, is a GHG mitigation technology. Therefore, risks and opportunities presented by climate change are a key focus of our risk management processes. Primarily, we evaluate the potential impact of future climate regulations on our business. We are a highly regulated business, and any changes to regulations in response to climate change may have a significant impact. Risks and opportunities are evaluated both on a corporate and facility level through the sustainability and environmental compliance departments. For example, the opportunities to generate carbon offsets are evaluated on a facility level. Opportunities to communicate our ability to mitigate greenhouse gas emissions are evaluated on a corporate level, taking into account several factors, including state and federal policy direction.

CC2.1c

How do you prioritize the risks and opportunities identified?

In the corporate sustainability and government affairs departments, climate change risks and opportunities are evaluated continuously as part of the department's core responsibilities. The criteria applied to assess materiality and prioritize the risks and opportunities identified includes financial, public relations, policy, and strategic considerations.

CC2.1d

Please explain why you do not have a process in place for assessing and managing risks and opportunities from climate change, and whether you plan to introduce such a process in future

Main reason for not having a process	Do you plan to introduce a process?	Comment

CC2.2

Is climate change integrated into your business strategy?

Yes

CC2.2a

Please describe the process of how climate change is integrated into your business strategy and any outcomes of this process

Covanta is unique in that our primary business, EfW, is a GHG mitigation technology. According to the U.S. Environmental Protection Agency (EPA), for every ton of municipal solid waste (MSW) diverted from landfill to an Energy-from-Waste (EfW) facility we can reduce life cycle GHG emissions by one ton of CO2e. EfW GHG reductions are quantified using a life cycle assessment (LCA) approach that includes GHG reductions from,A voided methane emissions from landfills(even when considering landfill gas capture and energy recovery), EfW electrical generation that offsets or displaces fossil-fuel-based electrical generation, and the recovery of metals for recycling reduces the amount of mining for new metal that must be done.

CC2.2b

Please explain why climate change is not integrated into your business strategy

CC2.2c

Does your company use an internal price of carbon?

Yes

CC2.2d

Please provide details and examples of how your company uses an internal price of carbon

We selectively use the U.S. Federal Government's Social Cost of Carbon to demonstrate & communicate the economic benefits of landfill diversion and energy from waste with policy and decision makers.

CC2.3

Do you engage in activities that could either directly or indirectly influence public policy on climate change through any of the following? (tick all that apply)

Direct engagement with policy makers
Trade associations
Funding research organizations

CC2.3a

On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
Mandatory carbon reporting	Support with minor exceptions	Submittal of comments in response to proposed regulation.	Covanta recommended that the latest science pertaining to emission factors and the determination of biogenic carbon through the latest radiocarbon dating methods be incorporated into revisions to the US EPA's mandatory GHG reporting rule.
Cap and trade	Support with minor exceptions	Direct engagement with policymakers and regulators.	Covanta supports cap and trade programs as long as their design and scope provide for the recognition of energy-from-waste's well proven ability to mitigate GHG emissions.
Clean energy generation	Support with minor exceptions	Direct engagement with policymakers and regulators.	Covanta supports clean energy and renewable energy generation policies that include energy-from-waste technologies.
Carbon tax	Support with minor	Direct engagement with policymakers and	Covanta supports a carbon tax, as long as the tax can be implemented equitably. We propose the best path forward is an aggressive strategy targeting short-lived climate pollutants like

Focus of legislation	Corporate Position	Details of engagement	Proposed legislative solution
	exceptions	regulators.	methane coupled with upstream carbon tax approach on fossil fuels capturing the vast majority of GHG emissions in an equitable manner.

CC2.3b

Are you on the Board of any trade associations or provide funding beyond membership?

Yes

CC2.3c

Please enter the details of those trade associations that are likely to take a position on climate change legislation

Trade association	Is your position on climate change consistent with theirs?	Please explain the trade association's position	How have you, or are you attempting to, influence the position?
Energy Recovery Council	Consistent	The Energy Recovery Council is active in communicating energy-from-waste's (EfW's) role as a key source of GHG mitigation and advocating for the proper treatment of EfW in state and federal policies in recognition of its benefits.	As a member of the Energy Recovery Council's board, we are involved in developing policy positions for the organization.
Biomass Power Association	Consistent	The Biomass Power Association (BPA) is actively involved in the legislative process, promoting biopower as an important addition to America’s energy portfolio, and helping to shape government policies that encourage the development and use of biomass energy. BPA’s advocacy efforts are vital as American policymakers at every level explore ways to reduce our nation’s dependence on foreign oil, and reduce the greenhouse gas emissions that contribute to global warming.	As a member of the Biomass Power Association's board, we are involved in developing policy positions for the organization.

CC2.3d

Do you publicly disclose a list of all the research organizations that you fund?

No

CC2.3e

Please provide details of the other engagement activities that you undertake

CC2.3f

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?

Covanta's direct and indirect activities that influence policy are coordinated through our Chief Sustainability Officer. In the corporate sustainability and government affairs departments, our policy positions pertaining to climate change are part of the department's core responsibilities. The chief sustainability officer regularly (at least annually) updates the board's Public Policy committee on key issues, including policy developments, related to climate change.

CC2.3g

Please explain why you do not engage with policy makers

Further Information

Page: CC3. Targets and Initiatives

CC3.1

Did you have an emissions reduction or renewable energy consumption or production target that was active (ongoing or reached completion) in the reporting year?

Absolute target
Renewable energy consumption and/or production target

CC3.1a

Please provide details of your absolute target

ID	Scope	% of emissions in scope	% reduction from base year	Base year	Base year emissions covered by target (metric tonnes CO2e)	Target year	Is this a science-based target?	Comment
Abs1	Scope 3: Waste generated in operations			2014		2020	Yes	Goal is to Increase total wastes avoided, recycled, or reused under our management by 25% by 2020 relative to a 2014 baseline of 548,000 tons. This includes both metals that we recover from our combustion ash, as well as waste recycling, reuse, or avoidance services we offer to our clients. For example, in 2014, we began a program to use industrial wastewaters as process make-up water at our SeMass energy from waste facility.

CC3.1b

Please provide details of your intensity target

ID	Scope	% of emissions in scope	% reduction from base year	Metric	Base year	Normalized base year emissions covered by target	Target year	Is this a science-based target?	Comment

CC3.1c

Please also indicate what change in absolute emissions this intensity target reflects

ID	Direction of change anticipated in absolute Scope 1+2 emissions at target completion?	% change anticipated in absolute Scope 1+2 emissions	Direction of change anticipated in absolute Scope 3 emissions at target completion?	% change anticipated in absolute Scope 3 emissions	Comment

CC3.1d

Please provide details of your renewable energy consumption and/or production target

ID	Energy types covered by target	Base year	Base year energy for energy type covered (MWh)	% renewable energy in base year	Target year	% renewable energy in target year	Comment
RE1	Electricity production	2014	8950000	100%	2020	100%	One of our sustainability performance indicators is, by 2020, to increase the amount of waste managed through energy recovery and other sustainable waste management operations by 10% relative to a 2014 baseline. To the extent that the growth in sustainable waste management services is from energy recovery, renewable energy generation will increase relative to the 2014 baseline.
RE2	Electricity production	2014					Achieve additional energy efficiency improvements at our energy recovery facilities of 60,000 MWh in total by the end of 2020.

CC3.1e

For all of your targets, please provide details on the progress made in the reporting year

ID	% complete (time)	% complete (emissions or renewable energy)	Comment
Abs1		22%	Increase in waste reduced, recycled, or avoided was predominately due to increased ferrous and non-ferrous metal recovery from combustion ash and an increase in beneficial reuse water.
RE1		3.4%	Increase in net electrical generation from energy-from-waste (EfW) facilities.
RE2		30%	Completed or approved 16 energy efficiency projects in 2015.

CC3.1f

Please explain (i) why you do not have a target; and (ii) forecast how your emissions will change over the next five years

CC3.2

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

CC3.2a

Please 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	Description of product/Group of products	Are you reporting low carbon product/s or avoided emissions?	Taxonomy, project or methodology used to classify product/s as low carbon or to calculate avoided emissions	% revenue from low carbon product/s in the reporting year	% R&D in low carbon product/s in the reporting year	Comment
Company-wide	Sustainable waste management services, inclusive of energy from waste (EfW), and Unwrapp process, which de-packages consumer packaged goods, recovering liquids for treatment or energy recovery through AD and recycling the packaging material.	Avoided emissions	Other: Comparative life cycle analysis	97.7%	More than 80% but less than or equal to 100%	

CC3.3

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

No

CC3.3a

Please identify the total number of projects at each stage of development, and for those in the implementation stages, the estimated CO2e savings

Stage of development	Number of projects	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)

CC3.3b

For those initiatives implemented in the reporting year, please provide details in the table below

Activity type	Description of activity	Estimated annual CO2e savings (metric tonnes CO2e)	Scope	Voluntary/ Mandatory	Annual monetary savings (unit currency - as specified in CC0.4)	Investment required (unit currency - as specified in CC0.4)	Payback period	Estimated lifetime of the initiative	Comment

CC3.3c

What methods do you use to drive investment in emissions reduction activities?

Method	Comment

CC3.3d

If you do not have any emissions reduction initiatives, please explain why not

All of our emissions reductions initiatives are included as part of our emissions reduction or renewable energy consumption or production targets described above.

Further Information

Page: CC4. Communication

CC4.1

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	Status	Page/Section reference	Attach the document	Comment
In mainstream reports (including an integrated report) but have not used the CDSB Framework	Complete	10-K Report	https://www.cdp.net/sites/2016/89/3989/Climate Change 2016/Shared Documents/Attachments/CC4.1/Covanta Holding 10-K 2015.pdf	
In voluntary communications	Complete	Sustainability Report	https://www.cdp.net/sites/2016/89/3989/Climate Change 2016/Shared Documents/Attachments/CC4.1/Covanta 2014 Sustainability Report.pdf	

Further Information

Module: Risks and Opportunities

Page: CC5. Climate Change Risks

CC5.1

Have you identified any inherent climate change risks that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Risks driven by changes in regulation

CC5.1a

Please describe your inherent risks that are driven by changes in regulation

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Uncertainty surrounding new regulation	California Assembly Bill AB32	Increased operational cost	1 to 3 years	Direct	Unknown	Low		California's Global Warming Solutions Act of 2006 ("AB 32"), seeks to reduce GHG emissions in California to 1990 levels by 2020. AB 32 includes an economy-wide “cap-and-trade” program, which could impact our California EfW facilities, but not our biomass facilities. 2013 and 2014 regulatory amendments excluded EfW facilities from the cap-and-trade program through the end of 2015. The future treatment of EfW facilities under this program is uncertain at this time.	
Uncertainty surrounding new regulation	Ontario, Canada cap and trade program	Increased operational cost	3 to 6 years	Direct	Unknown	Unknown		The province of Ontario, Canada has finalized a greenhouse gas cap and trade program which will begin operating in 2017. The Durham-York energy-from-waste facility, which we operate on behalf of the Durham and York regions, is effectively exempted from compliance obligations under the first compliance period, which extends from 2017-2020. However, the treatment of energy-from-waste facilities in the second compliance period, beginning in 2021, is uncertain. We cannot predict at this time the outcome of this policy	

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								development and its potential impact on our business.	

CC5.1b

Please describe your inherent risks that are driven by changes in physical climate parameters

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

CC5.1c

Please describe your inherent risks that are driven by changes in other climate-related developments

Risk driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

CC5.1d

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC5.1e

Please explain why you do not consider your company to be exposed to inherent risks driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

While Covanta is subject to physical risks associated with climate change, we do not expect them to be significant. Covanta owns/operates a portfolio of relatively modern facilities, the oldest of which began operation in 1987. The facilities were built to modern hurricane standards and should be able to withstand these and other weather-related events. Rising sea level attributable to climate change could become a long-term issue at several facilities; however, significant impacts are unlikely because the useful life of existing facilities would be expended by the time this phenomenon might result in sufficient sea level rise to impact these facilities.

A few facilities in the United States and Asia are located on estuaries that could become affected by storm surge, and in fact did become effected during Hurricane Sandy that impacted the northeast during fall 2012. Several facilities were impacted on a short term basis due to disruption of MSW collection and transportation systems, local power distribution system outage, and equipment damage; however, the impacts were confined to the facilities impacted by the storm and did not impact the long-term ability of these facilities to operate. Covanta is currently evaluating appropriate steps that can be taken to minimize future storm-related damage and business disruption.

CC5.1f

Please explain why you do not consider your company to be exposed to inherent risks driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

Covanta does not feel there are other significant risks associated with climate change at this time. While resource scarcity is a potential risk for the future, it does not appear to be significant. While climate change may result in a greater focus on resource efficiency and recovery, we believe this will more strongly impact waste management technologies, such as landfilling, which are net GHG sources and are not able to extract significant value from municipal solid waste. Although

consumer behavioral patterns and commodity prices may reduce the quantity of waste used by the company to fuel EfW facilities, a general waste surplus currently exists and growing population and economic prosperity is a driver for increased quantities.

Further Information

Page: CC6. Climate Change Opportunities

CC6.1

Have you identified any inherent climate change opportunities that have the potential to generate a substantive change in your business operations, revenue or expenditure? Tick all that apply

Opportunities driven by changes in regulation
Opportunities driven by changes in physical climate parameters

CC6.1a

Please describe your inherent opportunities that are driven by changes in regulation

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Cap and trade schemes	Federal cap and trade legislation	Reduced operational costs	3 to 6 years	Direct	Unknown	Unknown		In October 2015, EPA published two new rules regulating greenhouse gas emissions. The first rule, the Clean Power Plan, regulates existing fossil fuel fired electric generating units. The second regulation sets greenhouse gas emissions standards for new power plants. Our	

Opportunity driver	Description	Potential impact	Timeframe	Direct/Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								facilities are not regulated entities under either of these rules. States are required to develop their plans for implementing the new emission guidelines by 2016 or request an extension until 2018. However, these requirements have been stayed by the Supreme Court pending the Court's hearing of the appeal. Depending on the outcome of the Supreme Court decision, and specific details of the state plans, implementation of the Clean Power Plan may create additional demand for our power and new MWC capacity may benefit from certain credits; implementation scope and schedule is uncertain as a result of court challenges. We cannot predict at this time the magnitude of the potential impact to our business of these newly promulgated rules. We continue to closely follow developments in this area.	

CC6.1b

Please describe the inherent opportunities that are driven by changes in physical climate parameters

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
Other physical climate opportunities	Geographic proximity to population centers	Increased demand for existing products/services	Unknown	Direct	Unknown	Unknown		There may be opportunities associated with Covanta's facility locations that are generally closer to waste generating population centers than competing landfills. Escalating fuel costs will motivate disposal of MSW at sites closer to the point where MSW is generated. There may also be opportunities to manage wastes from storm events. These opportunities could reduce the cost differential between landfilling and energy from- waste, allowing energy-from-waste to become more cost competitive. Given the significant uncertainty in predicting the impacts of climate change, Covanta has not quantified the financial implications at this time. Aside from its normal business development activity	

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management
								centered around its core business of using waste for energy, Covanta has not taken specific actions to manage this opportunity.	

CC6.1c

Please describe the inherent opportunities that are driven by changes in other climate-related developments

Opportunity driver	Description	Potential impact	Timeframe	Direct/ Indirect	Likelihood	Magnitude of impact	Estimated financial implications	Management method	Cost of management

CC6.1d

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in regulation that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1e

Please explain why you do not consider your company to be exposed to inherent opportunities driven by physical climate parameters that have the potential to generate a substantive change in your business operations, revenue or expenditure

CC6.1f

Please explain why you do not consider your company to be exposed to inherent opportunities driven by changes in other climate-related developments that have the potential to generate a substantive change in your business operations, revenue or expenditure

The significant opportunities for Covanta have been identified above. The broadest opportunity is from Covanta's investment in renewable energy-from-waste and other sustainable waste management services, which displaces the need for fossil fuel-fired generators and landfills.

Further Information

Module: GHG Emissions Accounting, Energy and Fuel Use, and Trading

Page: CC7. Emissions Methodology

CC7.1

Please provide your base year and base year emissions (Scopes 1 and 2)

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 1		
Scope 2 (location-based)		

Scope	Base year	Base year emissions (metric tonnes CO2e)
Scope 2 (market-based)		

CC7.2

Please give the name of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

Please select the published methodologies that you use
US EPA Mandatory Greenhouse Gas Reporting Rule
Other

CC7.2a

If you have selected "Other" in CC7.2 please provide details of the standard, protocol or methodology you have used to collect activity data and calculate Scope 1 and Scope 2 emissions

CO2 emissions from MSW combustion in the United States are based on a USEPA emission factor for units with throughput less than 600 tpd and continuous emissions rate monitoring systems (CERMS) for units with MSW throughput greater than or equal to 600 short tons per day (tpd). For non-U.S. facilities, emissions from MSW combustion are generally based on an assumed 30% carbon for developed countries and 15% carbon for emerging countries. (See B. Bahor, M. Van Brunt, K. Weitz, A. Szurgot, “Life Cycle Assessment of Waste Management Greenhouse Gas Emissions Using Municipal Waste Combustor Data” Journal of Environmental Engineering, August 2010, 749-755) MSW is a mixture of biogenic (e.g. wood, paper) and anthropogenic (e.g. plastics, rubber) components. The split between the anthropogenic and biogenic CO2 emissions at facilities in developed countries is determined from analysis of EfW flue gas completed using ASTM method D-6866 “Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples Using Radiocarbon Analysis” on samples collected over a 24-hour period in accordance with ASTM method D-7459 “Standard Practice for Collection of Integrated Samples for the Speciation of Biomass (Biogenic) and Fossil-Derived Carbon Dioxide Emitted from Stationary Emissions Sources”. Site specific data was applied to those facilities where sufficient testing has been completed. For those facilities without data, the U.S. average of 65% was applied, based on Bahor et al. (2010). The ASTM methods are well accepted,

including by CARB, TCR, and the U.S. EPA.

The ASTM testing has not been completed at our EfW facilities in China. Experience at our facilities in China reveal that waste composition, including the split between anthropogenic and biogenic based components is different than in developed countries. On average, waste in China exhibits a significantly higher biogenic fraction (approximately 90%) due to lower levels of plastic in the waste.

CC7.3

Please give the source for the global warming potentials you have used

Gas	Reference
Other: Carbon dioxide	IPCC Fifth Assessment Report (AR5 - 100 year)
Other: Methane	IPCC Fifth Assessment Report (AR5 - 100 year)
Other: Nitrous oxide	IPCC Fifth Assessment Report (AR5 - 100 year)

CC7.4

Please give the emissions factors you have applied and their origin; alternatively, please attach an Excel spreadsheet with this data at the bottom of this page

Fuel/Material/Energy	Emission Factor	Unit	Reference

Further Information

Please see attached file for emission factors used.

Attachments

https://www.cdp.net/sites/2016/89/3989/Climate Change 2016/Shared Documents/Attachments/ClimateChange2016/CC7.EmissionsMethodology/2016 GHG Worksheet (Working Copy).xlsx

Page: CC8. Emissions Data - (1 Jan 2015 - 31 Dec 2015)

CC8.1

Please select the boundary you are using for your Scope 1 and 2 greenhouse gas inventory

Equity share

CC8.2

Please provide your gross global Scope 1 emissions figures in metric tonnes CO2e

4557860

CC8.3

Does your company have any operations in markets providing product or supplier specific data in the form of contractual instruments?

No

CC8.3a

Please provide your gross global Scope 2 emissions figures in metric tonnes CO2e

Scope 2, location-based	Scope 2, market-based (if applicable)	Comment
17478		

CC8.4

Are there are 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?

Yes

CC8.4a

Please provide details of the sources of Scope 1 and Scope 2 emissions that are within your selected reporting boundary which are not included in your disclosure

Source	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded
Regional Offices	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	Regional offices not located at other Covanta facilities are very small, consisting of one to no more than ten employees and are expected to have an immaterial impact on the overall inventory.

Source	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded
Transfer Stations	Emissions are not relevant	Emissions are not relevant	Emissions are not relevant	A detailed assessment of GHG emissions performed in several states as part of our earlier participation in The Climate Registry found that transfer station Scope 1 and Scope 2 GHG emissions represented 0.02% of total Scope 1 and Scope 2 GHG emissions. Exclusion of transfer station emissions is not expected to have a material impact on the inventory.
PFCs	Emissions are not relevant	No emissions excluded	Emissions are not relevant	A review of Covanta's operations in California, New Jersey, and New York completed as part of both voluntary reporting to the California Climate Action Registry (CCAR), mandatory reporting to the California Air Resources Board (CARB), and our earlier participation in The Climate Registry (TCR) voluntary reporting program, has revealed no emissions of perfluorocarbons (PFCs) from our operations. Therefore, PFC emissions have not been considered as part of this inventory.
Mobile Equipment	Emissions are not relevant	No emissions excluded	No emissions excluded	Covanta consumes relatively small amounts of fossil fuels, predominately diesel, for operations of heavy equipment at its facilities. Our reporting experiences to date, described above, have revealed these sources to be very small relative to our stationary combustion emissions from our electrical and steam generation facilities; therefore, they have not been included in the CDP inventory.
SF6 Emissions	Emissions are not relevant	No emissions excluded	No emissions excluded	Covanta also has relatively minor emissions of SF6, predominately associated with high-voltage switchgear. Our reporting experiences to date, described above, have revealed these sources to be very small relative to our stationary combustion emissions from our electrical and steam generation facilities; therefore, they have not been included in the CDP inventory.
Purchased Electricity in China and Italy	No emissions excluded	Emissions are not evaluated	Emissions are not evaluated	Covanta has equity share in energy from waste and independent power production facilities in China and Italy. Sufficient data is not available on the amount of electricity purchased. However, given that these facilities generate their own electricity, we expect Scope 2 emissions to be very small. In the U.S., our Scope 2 emissions are 0.5% of our CO2 emissions.
Covanta Environmental Solutions Acquisitions	Emissions excluded due to a recent acquisition	Emissions excluded due to a recent acquisition	Emissions excluded due to a recent acquisition	In 2014, Covanta began acquiring materials processing facilities which are small operations located in commercial-style buildings. These facilities are involved in the receiving, processing, and shipping of waste & materials. We have not evaluated these facilities for their GHG emissions; however, based on their

Source	Relevance of Scope 1 emissions from this source	Relevance of location-based Scope 2 emissions from this source	Relevance of market-based Scope 2 emissions from this source (if applicable)	Explain why the source is excluded
				emissions, we expect their contribution to be relatively small.

CC8.5

Please estimate the level of uncertainty of the total gross global Scope 1 and 2 emissions figures that you have supplied and specify the sources of uncertainty in your data gathering, handling and calculations

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 1	More than 5% but less than or equal to 10%	Data Gaps Assumptions Metering/ Measurement Constraints Sampling	CO2 emissions from MSW combustion in the United States are based on a USEPA emission factor for units with throughput less than 600 tpd and continuous emissions rate monitoring systems (CERMS) for units with MSW throughput greater than or equal to 600 short tons per day (tpd). Both emission factors and direct measurement of CO2 flow rate introduce error. For non-U.S. facilities, emissions from MSW combustion are generally based on an assumed 30% carbon for developed countries and 15% carbon for emerging countries. MSW composition can vary based on location and time of year. However, given that the CDP inventory is reported at the country and global levels, use of an average carbon content is appropriate. MSW is a mixture of both fossil-based and biogenic carbon. The fraction of biogenic carbon is determined in the U.S. using quarterly samples as required by the regulation, introducing potential sampling error. Furthermore, in certain cases, actual data was not available at the time of inventory completion. In these cases, estimates were used based on historic data and other operating parameters available. Estimated data is expected to be less than 2% of total emissions data.
Scope 2 (location-based)	More than 2% but less than or equal to 5%	Data Gaps	For our North American facilities, purchased electricity is closely tracked and metered.

Scope	Uncertainty range	Main sources of uncertainty	Please expand on the uncertainty in your data
Scope 2 (market-based)			

CC8.6

Please indicate the verification/assurance status that applies to your reported Scope 1 emissions

No third party verification or assurance – regulatory CEMS required

CC8.6a

Please provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/section reference	Relevant standard	Proportion of reported Scope 1 emissions verified (%)

CC8.6b

Please provide further details of the regulatory regime to which you are complying that specifies the use of Continuous Emissions Monitoring Systems (CEMS)

Regulation	% of emissions covered by the system	Compliance period	Evidence of submission
Other: 40 CFR 98	51	Thu 01 Jan 2015 - Thu 31 Dec 2015	https://www.cdp.net/sites/2016/89/3989/Climate Change 2016/Shared Documents/Attachments/CC8.6b/Demonstration of Data Submittal - USEPA eGGRT.pdf

CC8.7

Please indicate the verification/assurance status that applies to at least one of your reported Scope 2 emissions figures

No third party verification or assurance

CC8.7a

Please provide further details of the verification/assurance undertaken for your location-based and/or market-based Scope 2 emissions, and attach the relevant statements

Location-based or market-based figure?	Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 2 emissions verified (%)

CC8.8

Please identify if any data points have been verified as part of the third party verification work undertaken, other than the verification of emissions figures reported in CC8.6, CC8.7 and CC14.2

Additional data points verified	Comment
No additional data verified	

CC8.9

Are carbon dioxide emissions from biologically sequestered carbon relevant to your organization?

Yes

CC8.9a

Please provide the emissions from biologically sequestered carbon relevant to your organization in metric tonnes CO2

8706277

Further Information

Page: CC9. Scope 1 Emissions Breakdown - (1 Jan 2015 - 31 Dec 2015)

CC9.1

Do you have Scope 1 emissions sources in more than one country?

Yes

CC9.1a

Please break down your total gross global Scope 1 emissions by country/region

Country/Region	Scope 1 metric tonnes CO2e
United States of America	4228677
China	320502
Italy	8681

CC9.2

Please indicate which other Scope 1 emissions breakdowns you are able to provide (tick all that apply)

By GHG type
By activity

CC9.2a

Please break down your total gross global Scope 1 emissions by business division

Business division	Scope 1 emissions (metric tonnes CO2e)

CC9.2b

Please break down your total gross global Scope 1 emissions by facility

Facility	Scope 1 emissions (metric tonnes CO2e)	Latitude	Longitude

CC9.2c

Please break down your total gross global Scope 1 emissions by GHG type

GHG type	Scope 1 emissions (metric tonnes CO2e)
CO2	4499203
CH4	54583
N2O	4074

CC9.2d

Please break down your total gross global Scope 1 emissions by activity

Activity	Scope 1 emissions (metric tonnes CO2e)
Energy-from-Waste	4175746
Biomass to Energy	20007
Other Independent Power Production	286843

Activity	Scope 1 emissions (metric tonnes CO2e)
Other Industrial Steam Supply	75265

Further Information

Page: CC10. Scope 2 Emissions Breakdown - (1 Jan 2015 - 31 Dec 2015)

CC10.1

Do you have Scope 2 emissions sources in more than one country?

Yes

CC10.1a

Please break down your total gross global Scope 2 emissions and energy consumption by country/region

Country/Region	Scope 2, location-based (metric tonnes CO2e)	Scope 2, market-based (metric tonnes CO2e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low carbon electricity, heat, steam or cooling accounted in market-based approach (MWh)
United States of America	17478	0	0	0

CC10.2

Please indicate which other Scope 2 emissions breakdowns you are able to provide (tick all that apply)

By activity

CC10.2a

Please break down your total gross global Scope 2 emissions by business division

Business division	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)

CC10.2b

Please break down your total gross global Scope 2 emissions by facility

Facility	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)

CC10.2c

Please break down your total gross global Scope 2 emissions by activity

Activity	Scope 2 emissions, location based (metric tonnes CO2e)	Scope 2 emissions, market-based (metric tonnes CO2e)
Energy-from-waste	16904	0
Biomass to energy	575	0

Further Information

Page: CC11. Energy

CC11.1

What percentage of your total operational spend in the reporting year was on energy?

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

CC11.2

Please state how much heat, steam, and cooling in MWh your organization has purchased and consumed during the reporting year

Energy type	Energy purchased and consumed (MWh)
Heat	0
Steam	0
Cooling	0

CC11.3

Please state how much fuel in MWh your organization has consumed (for energy purposes) during the reporting year

37908784

CC11.3a

Please complete the table by breaking down the total "Fuel" figure entered above by fuel type

Fuels	MWh
Distillate fuel oil No 2	59214
Natural gas	631201
Propane	4783
Wood or wood waste	2786293
Municipal waste	33541107
Bituminous coal	886185

CC11.4

Please provide details of the electricity, heat, steam or cooling amounts that were accounted at a low carbon emission factor in the market-based Scope 2 figure reported in CC8.3a

Basis for applying a low carbon emission factor	MWh consumed associated with low carbon electricity, heat, steam or cooling	Comment
No purchases or generation of low carbon electricity, heat, steam or cooling accounted with a low carbon emissions factor	0	

CC11.5

Please report how much electricity you produce in MWh, and how much electricity you consume in MWh

Total electricity consumed (MWh)	Consumed electricity that is purchased (MWh)	Total electricity produced (MWh)	Total renewable electricity produced (MWh)	Consumed renewable electricity that is produced by company (MWh)	Comment
1015579	38029	6858098	6845120	926950	Consumed electricity that is purchased does not include electricity purchased for our facilities in China.

Further Information

Page: CC12. Emissions Performance

CC12.1

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

Decreased

CC12.1a

Please 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

Reason	Emissions value (percentage)	Direction of change	Please explain and include calculation
Emissions reduction activities		No change	
Divestment		No change	
Acquisitions		No change	
Mergers		No change	
Change in output	2.7	Decrease	Lower emissions due to lower coal consumption at electricity production associated with equity share in Chinese coal fired power plant
Change in methodology		No change	
Change in boundary		No change	
Change in physical operating conditions		Increase	
Unidentified			
Other	2.2	Decrease	Lower auxiliary fuel oil and natural gas consumption in energy-from-waste and steam generation facilities

CC12.1b

Is your emissions performance calculations in CC12.1 and CC12.1a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Location-based

CC12.2

Please describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tonnes CO2e per unit currency total revenue

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator: Unit total revenue	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
2.7	metric tonnes CO2e	1000	Location-based	7.8	Decrease	Operating revenues increased, and total Scope 1 and Scope 2 emissions decreased for reasons described above

CC12.3

Please provide any additional intensity (normalized) metrics that are appropriate to your business operations

Intensity figure =	Metric numerator (Gross global combined Scope 1 and 2 emissions)	Metric denominator	Metric denominator: Unit total	Scope 2 figure used	% change from previous year	Direction of change from previous year	Reason for change
1386	metric tonnes CO2e	full time equivalent (FTE) employee	1	Location-based	7.1	Decrease	FTE employment increased and total Scope 1 and 2 emissions decreased

Further Information

Page: CC13. Emissions Trading

CC13.1

Do you participate in any emissions trading schemes?

Yes

CC13.1a

Please complete the following table for each of the emission trading schemes in which you participate

Scheme name	Period for which data is supplied	Allowances allocated	Allowances purchased	Verified emissions in metric tonnes CO2e	Details of ownership
Regional Greenhouse Gas Initiative	Thu 01 Jan 2015 - Thu 31 Dec 2015			26790	Facilities we own and operate

CC13.1b

What is your strategy for complying with the schemes in which you participate or anticipate participating?

Covanta is subject to the RGGI cap and trade program for an auxiliary boiler installed at our Niagara Falls, NY facility. Our current strategy is to purchase allowances needed through the secondary market. Our core business, EfW, is not subject to the RGGI cap and trade program. Therefore, we currently have minimal market exposure to this program.

CC13.2

Has your organization originated any project-based carbon credits or purchased any within the reporting period?

No

CC13.2a

Please provide details on the project-based carbon credits originated or purchased by your organization in the reporting period

Credit origination or credit purchase	Project type	Project identification	Verified to which standard	Number of credits (metric tonnes of CO2e)	Number of credits (metric tonnes CO2e): Risk adjusted volume	Credits cancelled	Purpose, e.g. compliance

Further Information

Page: CC14. Scope 3 Emissions

CC14.1

Please account for your organization's Scope 3 emissions, disclosing and explaining any exclusions

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
Purchased goods and services	Relevant, calculated	115520	Calculation based on consumption of relevant raw materials, including lime, carbon, limestone, urea, and ammonia and published emission factor data.	0%	
Capital goods	Not relevant, explanation provided				Peer-reviewed literature has found that capital goods and maintenance materials are a minor part of the GHG emissions associated with energy-from-waste

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
					and biomass-to-energy facilities.
Fuel-and-energy-related activities (not included in Scope 1 or 2)	Not relevant, explanation provided				All emissions associated with Covanta's fuel and energy use (on an equity share basis) are included in our Tier 1 and Tier 2 emissions
Upstream transportation and distribution	Not relevant, explanation provided				In general, Covanta's energy-from-waste facilities are located close to transportation centers from which waste is procured.
Waste generated in operations	Not relevant, explanation provided				Covanta's primary business is management of waste in our energy-from-waste facilities. These operations generate an inert ash that is either beneficially used, placed in MSW landfills, or placed in ash monofills.
Business travel	Not evaluated				
Employee commuting	Not evaluated				
Upstream leased assets	Not relevant, explanation provided				Covanta Energy does not have any appreciable upstream leased assets.
Downstream transportation and distribution	Not relevant, explanation provided				Covanta's primary products / outputs are energy products in the form of steam and electricity. Any downstream losses associcated with delivery of these products are already included in our scope 1 emissions.
Processing of sold products	Not relevant, explanation provided				Covanta's solid products include electricity, steam and metals recovered for recycling. While metals recovered for recycling would generate GHGs during the recycling process, they offer a net savings relative to the use of raw materials. Steam and electricity are not subject to further processing.
Use of sold products	Not relevant, explanation				Sold products, namely metals recovered for recycling, are not suitable for use without processing.

Sources of Scope 3 emissions	Evaluation status	metric tonnes CO2e	Emissions calculation methodology	Percentage of emissions calculated using data obtained from suppliers or value chain partners	Explanation
	provided				
End of life treatment of sold products	Not relevant, explanation provided				Covanta's primary products steam and electricity, do not require end of life treatment. The recovery of metals for recycling is further processed and the end of life emissions associated with the final product into which the recovered metal is used is not attributable to Covanta.
Downstream leased assets	Not relevant, explanation provided				Covanta does not have downstream leased assets.
Franchises	Not relevant, explanation provided				Covanta does not have franchises.
Investments	Not relevant, explanation provided				Covanta does not have significant investments outside of equity investments already included in our Scope 1 inventory.
Other (upstream)	Not evaluated				
Other (downstream)	Not evaluated				

CC14.2

Please indicate the verification/assurance status that applies to your reported Scope 3 emissions

No third party verification or assurance

CC14.2a

Please provide further details of the verification/assurance undertaken, and attach the relevant statements

Verification or assurance cycle in place	Status in the current reporting year	Type of verification or assurance	Attach the statement	Page/Section reference	Relevant standard	Proportion of reported Scope 3 emissions verified (%)

CC14.3

Are you able to compare your Scope 3 emissions for the reporting year with those for the previous year for any sources?

Yes

CC14.3a

Please identify the reasons for any change in your Scope 3 emissions and for each of them specify how your emissions compare to the previous year

Sources of Scope 3 emissions	Reason for change	Emissions value (percentage)	Direction of change	Comment
Purchased goods & services	Change in output	11	Decrease	Estimated decrease in Scope 3 emissions from purchased goods and services as a result of lower raw material consumption.

CC14.4

Do you engage with any of the elements of your value chain on GHG emissions and climate change strategies? (Tick all that apply)

Yes, our customers

CC14.4a

Please give details of methods of engagement, your strategy for prioritizing engagement and measures of success

Covanta works closely with its clients to identify opportunities to improve the efficiency of plant operations or implement metals recovery systems. Metal recovery systems extract ferrous and non-ferrous metals for recycling from the ash resulting in significant GHG and energy savings relative to processing metals from raw materials. Projects (engagements) are prioritized by practicality and return on investment potential. Performance of projects is measured by tracking electricity or steam generation efficiency improvements or energy savings or through the incremental metals recovered by the project.

In addition, Covanta is currently working with two of its clients on the continued generation of carbon offset credits through the Verified Carbon Standard associated with recent capital expansions of energy-from waste facilities.

CC14.4b

To give a sense of scale of this engagement, please give the number of suppliers with whom you are engaging and the proportion of your total spend that they represent

Number of suppliers	% of total spend (direct and indirect)	Comment

CC14.4c

If you have data on your suppliers' GHG emissions and climate change strategies, please explain how you make use of that data

How you make use of the data	Please give details

CC14.4d

Please explain why you do not engage with any elements of your value chain on GHG emissions and climate change strategies, and any plans you have to develop an engagement strategy in the future

Further Information

Module: Sign Off

Page: CC15. Sign Off

CC15.1

Please provide the following information for the person that has signed off (approved) your CDP climate change response

Name	Job title	Corresponding job category
Michael Van Brunt	Director, Sustainability	Environment/Sustainability manager

Further Information

CDP 2016 Climate Change 2016 Information Request