

Inquiries – September 2017

#	Date Received	Method Received	Comment Details / Description	Response / Remedial Action	Date Responded	Staff Initials
1	September 5, 2017	Resident visited Regional Headquarters and internal staff emailed project team staff.	Resident made an inquiry to waste staff at Regional Headquarters on August 31, 2017 in relation to the waterfront trail in Courtice as it relates to the Durham York Energy Centre.	<p>Good Afternoon,</p> <p>This email is in response to your inquiry made to waste staff at Regional Headquarters on August 31, 2017 in relation to the waterfront trail in Courtice as it relates to the Durham York Energy Centre.</p> <p>A property maintenance agreement is being developed with Clarington and Durham Region which includes waste bins and grass cutting. Further details regarding the specifics the property maintenance agreement, including waste collection bins that will be made available to the public, are not yet available as discussions are ongoing.</p> <p>Regards, Project Team</p>	September 5, 2017	DL
2	September 24, 2017	Project Email	<p>To whomever it may concern, I am doing a project on Waste to Energy powerplants. Part of my project is determining how the plants work. If you could please take the time, there are a few questions I would like to have answered.</p> <p>The questions are:</p> <ol style="list-style-type: none"> 1. How large are the average Waste to Energy power plants? 2. How high are the temperatures to burn the waste required to be? 3. How do you power the fire for the incinerators? 4. What are the materials used to make up the plants (i.e. walls, pipes, turbines etc) 5. How do they work and what are the processes in the following chambers?: I. Nitrogen Oxide removal system II. Mercury and dioxin removal system III. Acid Gas removal system 6. Where do you get the items used to neutralise the gases in the above chambers? 	<p>Good Morning,</p> <p>This email is in response to your inquiry dated September 24, 2017. While I have provided responses to your questions below, please note that these responses are specific to the Durham York Energy Centre (DYEC) as the waste stream, technology, energy production/usage, plant design, etc. will vary from plant to plant. In addition, a wide range of information regarding our facility can be found on our project website Durham York Waste Website.</p> <p>1. How large are the average Waste to Energy power plants?</p> <p>The size of a Waste to Energy facility will vary depending on the type and amount of waste received.</p>	October 10, 2017	DL

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			<p>7. How are the above chambers controlled and monitored?</p> <p>8. Approximately how much power can be produced from 10 kilograms of waste?</p> <p>9. How much energy is required to run the plant itself?</p> <p>10. If a smaller version of the plant was produced, instead of hooking it up to an electricity grid, can it be hooked straight to homes in communities?</p> <p>11. How exactly does the turning of turbines create power used in homes?</p> <p>12. How long does a Waste to Energy plant need to run to supply enough energy to power one household?</p> <p>13. In an attempt to reduce the power required to run the plant, could it be feasible to have someone shovelling the waste into the combustion chamber and potentially turning the grate manually?</p> <p>14. Would creating a small-scale waste to energy plant for third world communities be an achievable idea?</p> <p>I look forward to hearing your reply.</p>	<p>2. How high are the temperatures to burn the waste required to be?</p> <p>At the DYEC, the temperature in the combustion zone of each Boiler must reach and maintain 1000 degrees Celsius.</p> <p>3. How do you power the fire for the incinerators?</p> <p>Natural gas is used during start-up and shutdown to reach 1000 degrees Celsius. After waste is introduced, natural gas is backed out until the temperature is self-sustaining in waste alone.</p> <p>4. What are the materials used to make up the plants (i.e. walls, pipes, turbines etc)?</p> <p>The Durham York Energy Center is made of a variety of materials. The main components/areas in the plant are listed below.</p> <ul style="list-style-type: none"> - Control Room - Scale House - Tipping Floor - Waste Bunker and Grapple - Combustion Chamber and Boiler - Steam Turbine and Electrical Generator - Switchyard - Air Cooled Condenser - Air Pollution Control and Monitoring System <ul style="list-style-type: none"> o Automated combustion control o Selective non-catalytic reduction system and a Very Low NOx combustion system o Dry recirculation scrubber system o Baghouse 		

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				<ul style="list-style-type: none"> ○ Continuous emissions monitoring system - Residual Materials & Metal Recovery <ul style="list-style-type: none"> ○ Rotating drum magnet (ferrous metals) ○ Eddy current separator (non-ferrous metals) ○ Ash management system (encapsulation of fly ash) <p>5. How do they work and what are the processes in the following chambers?: I. Nitrogen Oxide removal system II. Mercury and dioxin removal system III. Acid Gas removal system</p> <p>For a detail description of how each area above works, please visit our website Durham York Waste Website The virtual tour gives a detailed look at our facility and a “Full Text Script” of the video is provided if you click that header at the top of the screen.</p> <p>6. Where do you get the items used to neutralize the gases in the above chambers?</p> <p>These reagents are procured through Covanta as the operators of the DYEC.</p> <p>7. How are the above chambers controlled and monitored?</p> <p>The DYEC is equipped with emissions control and monitoring systems. Continuous emission monitoring systems operate 24 hours a day to ensure compliance with emissions standards.</p> <p>8. Approximately how much power can be produced from 10 kilograms of waste?</p> <p>Assume an energy recovery of 760 KWh/tonne of waste processed. So for 10 kg of waste, we would</p>		

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				<p>expect to produce 7.6 KWh of electricity.</p> <p>9. How much energy is required to run the plant itself?</p> <p>The DYEC generates approximately 17.5 MW of gross electrical energy, 14-15 MW of net, on a continuous basis.</p> <p>10. If a smaller version of the plant was produced, instead of hooking it up to an electricity grid, can it be hooked straight to homes in communities?</p> <p>We would not be able to connect directly into homes in our area.</p> <p>11. How exactly does the turning of turbines create power used in homes?</p> <p>After the steam is superheated, it travels through pipes to a steam turbine generator to produce electricity. The high pressure steam rotates the turbine blades and releases energy. The steam turbine is coupled to an electrical generator that produces electricity.</p> <p>Electricity from the generator is fed directly into the local electrical grid. The switchyard uses large transformers to convert the generated voltage up to extremely high voltages for long-distance transmission on the grid.</p> <p>12. How long does a Waste to Energy plant need to run to supply enough energy to power one household?</p> <p>Using the OEB “Defining Ontario’s Typical Electricity Customer” EB-2016-0153 dated April 14, 2016, the average Ontario household consumes approximately 750 KWh of electricity per month. So approximately 1 tonne (1,000 kg) of trash would supply the monthly energy needs of the average household.</p>		

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				<p>13. In an attempt to reduce the power required to run the plant, could it be feasible to have someone shovelling the waste into the combustion chamber and potentially turning the grate manually?</p> <p>This would not be feasible for the DYEC.</p> <p>14. Would creating a small-scale waste to energy plant for third world communities be an achievable idea?</p> <p>Comments regarding the feasibility of another plant cannot be provided.</p> <p>Regards, Project Team</p>		

Total Inquiries – September 2017

Inquiry Type	Total by Inquiry Type
Total Project Team Inquiries received this month by project web email / telephone:	2
Total Covanta Inquiries received this month:	0
Total Durham Region Council / Committee Inquiries received this month:	0
Total Durham Region Call Centre Inquiries received this month:	0
Total Inquiries received from York Region this month:	0
Total Inquiries received from previous months in 2017 to-date:	28
Total Inquiries received in 2017 to-date:	30

Complaints – September 2017

#	Date Received	Method Received	Comment Details / Description	Response / Remedial Action	Date Responded	Staff Initials
1	-	-	-	-	-	-
2	-	-	-	-	-	-
3	-	-	-	-	-	-
4	-	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-

Total Complaints – September 2017

Complaint Type	Total by Complaint Type
Total Project Team Complaints received this month by project web email / telephone:	0
Total Covanta Complaints received this month:	0
Total Durham Region Council / Committee Complaints received this month:	0
Total Durham Region Call Centre Complaints received this month:	0
Total Inquiries received from York Region this month:	0
Total Inquiries received from previous months in 2017 to-date:	6
Total Inquiries received in 2017 to-date:	6

If you require this information in an accessible format, please contact The Regional Municipality of Durham at 1-800-372-1102 ext. 3560.