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## Section 13 Summary

To ensure the Facility is designed, constructed and operated in accordance with the recommendations set out in this EA Study document, the Regions have developed a plan that sets out how and when all commitments, including impact management measures, made in the EA Study document will be fulfilled. This plan also documents how the Regions will report to the Ministry on compliance.

All assumed environmental mitigation and commitments to future work during construction, operation, and post-closure with respect to the Undertaking for the EA in general as well as those found in the site-specific technical study reports have been documented in this section.

## 13. Commitments

To ensure the Facility is designed, constructed and operated in accordance with the recommendations set out in this EA, the Regions have developed a plan that sets out how and when all commitments, including impact management measures, made in the document will be fulfilled. This plan also documents how the Regions will report to the Ministry on compliance with these commitments. As per the Ministry's Codes of Practice, this information has been summarized in a single table. The table has columns that include a brief description of all commitments, where in the document the commitment is mentioned and when each commitment will be fulfilled. Since the EA has not yet been approved at the time of submission of this EA Study document, information regarding conditions of approval cannot be included as a decision has not yet been made. If approval is granted and conditions are imposed, the approach to documenting those conditions will be similar to the approach taken to documenting the commitments.

Table 13-1 documents all environmental mitigation and commitments to future work during construction, operation, and post-closure with respect to the Proposed Undertaking.

- "Construction" is considered to be prior to and/or during construction activities (as required) based on the estimated 3 year construction period commencing in 2011-2014.
- "Operation" is considered to be prior to and/or during operations (as required).
- "Post-closure" is considered to be the time after the Undertaking will be closed, which typically includes decommissioning, post-closure monitoring and property maintenance.

It should be noted that the details of the impact mitigation management and future work measures will be refined, clarified and updated through the subsequent EPA and other approvals processes required to construct and operate the Facility. It is intended and anticipated that those refined impact mitigation management and future work measures will be addressed through the terms and conditions of those subsequent approvals as is normally the case. Once subsequent approvals are issued, compliance reporting under this EA can terminate for matters that are addressed in those subsequent approvals.

Section 13: Commitments

**Table 13-1 Summary of Environmental Mitigation and Commitments to Future Work**

Environmental Element/Concern and Potential Effect	Relevant Section of EA	Implementation Period	Summary of Environmental Mitigation and Commitments to Future Work
General	2	Construction / Operation / Post Closure	<ul style="list-style-type: none"> <li>The Proponents commit that if approval to proceed with the Undertaking is given, it will be the Proponents who are legally responsible for carrying out the Undertaking as approved.</li> </ul>
General	11	Operation	<ul style="list-style-type: none"> <li>The Regions will undertake an evaluation of post-closure uses for the property associated with the Project, at the appropriate time when the Project is nearing the end of its life expectancy.</li> </ul>
General	11	Post Closure	<ul style="list-style-type: none"> <li>Decommissioning of the Facility will be conducted in compliance with applicable regulatory requirements at the time of decommissioning.</li> </ul>
General	11.2	Construction / Operation	<ul style="list-style-type: none"> <li>Environmental protection awareness, spill prevention planning and contingency training will be implemented for all employees as necessary and appropriate.</li> </ul>
General	15	Construction / Operation / Post Closure	<ul style="list-style-type: none"> <li>The Regions will prepare and submit to the Director of the EAAB of the Ontario MOE an EA Compliance Monitoring Program.</li> </ul>
Air Quality	11.1	Construction	<p><b><i>Air quality related mitigation/management during construction</i></b>            Mitigation and environmental management / monitoring measures will include:</p> <ul style="list-style-type: none"> <li>Employment of controlled entrances and exits at the construction site to minimize the offsite tracking of mud.</li> <li>Temporary and permanent grassing in disturbed areas.</li> <li>Dust control during dry periods.</li> <li>Possible implementation of an idling protocol as required.</li> <li>Adherence to an equipment maintenance program.</li> <li>Ambient air quality monitoring for particulate matter will be undertaken to monitor the effectiveness of the mitigation measures.</li> </ul>
		Operation	<p><b><i>Air quality related mitigation/management during operation</i></b>            Mitigation and environmental management / monitoring measures will include:</p> <ul style="list-style-type: none"> <li>The following emissions control equipment will be incorporated into the design of the Facility:               <ul style="list-style-type: none"> <li>very low NOx (VLN) system in the Facility's stoker;</li> </ul> </li> </ul>

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Environmental Element/Concern and Potential Effect	Relevant Section of EA	Implementation Period	Summary of Environmental Mitigation and Commitments to Future Work
			<ul style="list-style-type: none"> <li>○ SNCR for additional NO<sub>x</sub> control;</li> <li>○ activated carbon injection after the economizer for mercury and dioxin/furan control;</li> <li>○ acid gas scrubber for the removal of gases such as SO<sub>2</sub> and HCl; and,</li> <li>○ a fabric filter baghouse to remove solid particulate matter.</li> <li>● The application of design and operations pre-processing odour control measures such as enclosed loading, negative air pressure inside the Facility and fully-enclosed feedstock delivery trucks.</li> <li>● Provision of a CEM system to monitor and record:             <ul style="list-style-type: none"> <li>○ The baghouse outlet for opacity, moisture, CO, O<sub>2</sub>, NO<sub>x</sub>, SO<sub>2</sub>, HCL and HF. Opacity measurements will be used to as the filter bag leak detection system.</li> <li>○ The economizer outlet for O<sub>2</sub>, SO<sub>2</sub> and CO.</li> <li>○ Flue gas temperatures at the inlet of the boiler convection section and at the baghouse inlet.</li> <li>○ The temperature and pressure of the feedwater and steam for each boiler.</li> <li>○ The mass flow rate of steam at each boiler.</li> </ul> </li> <li>● A long-term continuous dioxins sampling device will be installed to monitor the adsorption of dioxins onto the exchangeable adsorption-resin-filled cartridge.</li> <li>● Emissions (stack) testing and monitoring protocol as required for the C of A under the EPA.</li> <li>● NPRI emissions reporting that will entail a combination of monitoring or direct measurement, mass balance, process-specific emissions factors and engineering estimates.</li> <li>● Proposed ambient air quality monitoring in the immediate vicinity of the Facility for a 3-year period.</li> </ul>
Surface Water and Groundwater	11.2	Construction	<p><b>Surface water, storm water, and groundwater related mitigation / management during construction</b></p> <p>Mitigation and environmental management / monitoring measures will include:</p> <ul style="list-style-type: none"> <li>● Construction phase drainage will route stormwater from throughout the Site to a stormwater sedimentation pond and to the extent feasible, maintain existing drainage routes. Permanent SWM ponds may be constructed early to reduce need for sedimentation ponds.</li> </ul>

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Environmental Element/Concern and Potential Effect	Relevant Section of EA	Implementation Period	Summary of Environmental Mitigation and Commitments to Future Work
			<ul style="list-style-type: none"> <li>• Use of perimeter ditching and site grading as well as silt fencing around forested areas to isolate runoff.</li> <li>• Use of setback transition use areas and erosion control fencing along watercourses.</li> <li>• ESC will be implemented during the construction phase to reduce potential soil loss and runoff velocities.</li> <li>• During the construction phase, stormwater will be routed via conveyance swales and/or storm sewers draining catchbasins to a SWM pond in the southwest corner of the Site.</li> <li>• The pond will discharge to the CN Rail swale and stormwater will subsequently be conveyed to Tooley Creek.</li> <li>• In addition to the pond, lot level, and conveyance controls such as surface stabilization measures, sediment traps, and swales enhanced with rock check dams will also be employed.</li> <li>• Grading plans will be designed to maintain existing drainage patterns which will ensure all captured stormwater will be routed through SWM features.</li> <li>• Dewatering and excavation pumping is expected in order to establish a sufficiently dry environment to construct the Facility foundations.</li> <li>• A series of groundwater monitoring wells may be installed within the Site to assess the Facility's effects on both groundwater quantity and quality during construction to be determined at subsequent approvals stage.</li> </ul>
		Operation	<p><b>Surface water, storm water, and groundwater related mitigation / management during operation</b></p> <p>Mitigation and environmental management / monitoring measures will include:</p> <ul style="list-style-type: none"> <li>• Storm water pond design criteria will meet enhanced design guidance criteria found in the MOE SWM Planning and Design Manual;</li> <li>• Increase in runoff potential will be mitigated with peak flow attenuation, baseflow augmentation and SWM design that provides an enhanced level of receiving water protection;</li> <li>• Accidents and malfunctions planning and spill management redundancy and stormwater control from source to discharge will ensure the protection of surface water and groundwater resources.</li> <li>• Monitoring of stormwater end-of-pipe Facility discharge quality (as required as</li> </ul>

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Environmental Element/Concern and Potential Effect	Relevant Section of EA	Implementation Period	Summary of Environmental Mitigation and Commitments to Future Work
			part of C of A);
Soils	11.2 and 11.3	Construction	<p><b>Soils related (geotechnical and erosion and sedimentation) mitigation / management during construction</b></p> <p>Mitigation and environmental management / monitoring measures will include:</p> <ul style="list-style-type: none"> <li>• Topsoil and subsoil salvage and storage.</li> <li>• Apply erosion and sedimentation control measures (also described in surface water).</li> </ul>
Acoustic	11.4	Construction	<p><b>Noise related mitigation / management during construction</b></p> <p>Mitigation and environmental management / monitoring measures will include:</p> <ul style="list-style-type: none"> <li>• Pile driving effects will be reduced through alternative technologies (e.g., vibratory pile driving), controls, and scheduling.</li> <li>• Construction vehicle traffic is predicted to be acceptable against applicable criteria, but short-term (i.e., 1-hour) effects during peak demand are possible. These peaking issues will be reduced through scheduling and planning of vehicle trips.</li> <li>• A monitoring program and contingency plan will be implemented to address any issues that may arise during the construction and post-closure periods of the Facility.</li> </ul>
		Operation	<p><b>Noise related mitigation / management during operation</b></p> <p>Mitigation and environmental management / monitoring measures will include:</p> <ul style="list-style-type: none"> <li>• The Facility will be designed to current standards incorporating efficiencies and design enhancements that reduce sound emissions.</li> <li>• Where necessary, mitigation measures will be included to ensure applicable noise criteria are met at PORs as predicted.</li> <li>• Mitigation measures may include the use of equipment control options such as enclosures, local or property-line barriers, mufflers and silencers, and acoustic baffles or insulation.</li> </ul>
Visual	11.5	Construction	<p><b>Visual related mitigation / management during construction</b></p> <p>Mitigation and environmental management / monitoring measures will include:</p> <ul style="list-style-type: none"> <li>• Staging of construction activities.</li> <li>• Timely removal of construction debris.</li> </ul>

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Environmental Element/Concern and Potential Effect	Relevant Section of EA	Implementation Period	Summary of Environmental Mitigation and Commitments to Future Work
			<ul style="list-style-type: none"> <li>• A monitoring program and contingency plan will be implemented to address any issues that may arise during the construction of the Facility.</li> <li>• Investment in architectural enhancements to the Facility.</li> </ul>
		Operation	<p><b>Visual related mitigation / management during operation</b>            Mitigation and environmental management / monitoring measures will include:</p> <ul style="list-style-type: none"> <li>• The use of neutral external colours and effective landscaping.</li> <li>• If concerns regarding Facility visibility are raised by members of the community in the vicinity of the Facility, mitigation measures will be considered such as planting trees or other suitable vegetation at the particular location to provide a screen within the line of the sight of the Facility.</li> </ul>
Natural Environment	11.6	Construction	<p><b>Natural environment related mitigation / management during construction</b>            Mitigation and environmental management / monitoring measures will include:</p> <ul style="list-style-type: none"> <li>• Protective protocols to avoid killing or harming wildlife during Project activities.</li> <li>• Wildlife corridor along the entire east-west length of the Facility's southern property line may be established to enhance wildlife movement.</li> <li>• Native tree and shrub species will be planted and existing species allowed to grow without disturbance providing additional habitat.</li> <li>• Undertake a pre-construction survey to assess bird nesting activity prior to clearing and grubbing.</li> <li>• Habitat enhancement for Chimney Swifts, if present onsite, and once construction has been completed, compensation for the loss of hedgerow by incorporating native shrubs and trees into landscaping for the Facility.</li> </ul>
Social / Cultural <i>(also includes consideration archaeological and traffic related commitments)</i>	11.7, 11.8, and 11.9	Construction	<p><b>Social / Cultural related mitigation / management during construction</b>            Mitigation and environmental management / monitoring measures will include:</p> <ul style="list-style-type: none"> <li>• See Noise above for related mitigation / management measures.</li> <li>• See Visual above for related mitigation / management measures</li> <li>• Dust control during construction will be accomplished through a number of physical and operational methods such as construction exits, timely revegetation, watering, and staging of work.</li> <li>• Deeply buried archaeological resources could still exist and standard conditions regarding discovery of human remains and/or other cultural heritage</li> </ul>

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Environmental Element/Concern and Potential Effect	Relevant Section of EA	Implementation Period	Summary of Environmental Mitigation and Commitments to Future Work
			<p>values will apply.</p> <ul style="list-style-type: none"> <li>• Road/pavement improvements to the South Service Road and Osborne Road to accommodate construction vehicles.</li> <li>• Formation of a Thermal Treatment Facility Site Liaison Committee (SLC) for the construction period.</li> <li>• Development and implementation of a Community Relations Plan (CRP) through which Durham, York, and Covanta staff will relate to the local community, including advance notification to local authorities and residents near the Facility of any planned unusual noises or activities (e.g., pile driving, steam blows) or other events that may be of concern to the local community during the construction phase. The plan will also establish contacts and procedures for providing accurate and timely information to the community in the event of an unforeseen incident that may cause concern or impact upon the community.</li> <li>• Development and implementation of a community complaints system for construction.</li> </ul>
		Operation	<p><b><i>Social / Cultural related mitigation / management during operation</i></b>            Mitigation and environmental management / monitoring measures will include:</p> <ul style="list-style-type: none"> <li>• Mitigation of odours during operation includes:               <ul style="list-style-type: none"> <li>○ Management of residual waste on enclosed vehicles and on enclosed tipping floor; and,</li> <li>○ Air from tipping floor is used as combustion air, destroying odours and maintaining negative pressure within receiving area.</li> </ul> </li> <li>• See Noise above for related mitigation / management measures.</li> <li>• See Visual above for related mitigation / management measures</li> <li>• Mitigation of dust during operation includes:               <ul style="list-style-type: none"> <li>○ Management of residual waste on enclosed vehicles and on enclosed tipping floor; and,</li> <li>○ Management of ash and residues using various measures to reduce ash emissions.</li> </ul> </li> <li>• Mitigation of vectors/vermin through pest/vector control.</li> <li>• Mitigation of litter through implementation of litter control program throughout</li> </ul>

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			<p>the Site.</p> <ul style="list-style-type: none"> <li>• Some traffic control measures (traffic signals, loop ramps, etc.) may be required to the adjacent road network to address future traffic conditions in the CEBP.</li> <li>• The Host Community Agreement between Durham and the Municipality of Clarington includes the Region assuming the cost of construction of Energy Drive from Courtice Road to Osborne Road to serve the CEBP.</li> <li>• Soil testing for contaminants for a minimum of three years at which time its effectiveness will be evaluated (recommendation by Durham Region Medical Officer of Health, endorsed by both Regional Councils)</li> <li>• Formation of a Thermal Treatment Facility Site Liaison Committee SLC for the operations period.</li> <li>• See construction above regarding development and implementation of a CRP.</li> <li>• See construction above regarding development and implementation of a community complaints system for operations.</li> </ul>
Economic	11.10	Construction / Operation	<p><b><i>Economic related mitigation / management during construction and operation</i></b>          Mitigation and environmental management / monitoring measures will include:</p> <ul style="list-style-type: none"> <li>• See Social / Cultural above regarding the development and Implementation of a Community Relations Plan.</li> <li>• In order to mitigate the effects of the Facility on the Local Tax base in Clarington, the proposed Host Community Agreement between Durham and the Municipality of Clarington includes the Region assuming the cost of:             <ul style="list-style-type: none"> <li>○ Establishment of a hazardous waste depot to serve Clarington residents;</li> <li>○ Construction of Energy Drive from Courtice Road to Osborne Road to serve the Energy Park;</li> <li>○ Construction of a SWM Facility to serve the Energy Park;</li> <li>○ Construction of a waterfront trail from Courtice Road to the eastern limit of the Durham property;</li> <li>○ Transfer of 22 acres of surplus land adjacent to the Courtice WPCP to Clarington; and,</li> <li>○ Commencement of the EA for servicing the Clarington Science Park.</li> </ul> </li> <li>• See Noise above for related mitigation / management measures.</li> </ul>

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Environmental Element/Concern and Potential Effect	Relevant Section of EA	Implementation Period	Summary of Environmental Mitigation and Commitments to Future Work
			<ul style="list-style-type: none"> <li>• See Visual above for related mitigation / management measures</li> <li>• See Social / Cultural above regarding the finalization and execution of the Host Community Agreement between Durham and the Municipality of Clarington.</li> </ul>
Human Health and Ecological Risk	11.1 and 11.11	Construction / Operation	<ul style="list-style-type: none"> <li>• Refer to "Air Quality" above.</li> </ul>