Design and Operations Report

Grimsby Energy Inc.

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Riepma CONSULTANTS INC.

Contents

Design and Operations Report

Grimsby Energy Inc. Anaerobic Digester Project

1.0 Introduction

1.1 Purpose

This Design and Operations Report is prepared in partial fulfillment of the Renewable Energy Approval requirements as set out in Ontario Regulations 359/09 and 521/10. The project is a Class 3 Anaerobic Digester with a name plate capacity of 1MW. The project has received a FIT contract F-000610-BIG-130-302.

1.2 Project Location

The project will be constructed on lands owned by Grimsby Energy Inc. at 442 Sobie Road in the Town of Grimsby. The project will be located on the northwestern 2.5ha of a 10.5 ha property located on the south side of Sobie Road approximately 300m east of Park Road. The legal description of the property is part of Lots 1 and 2, Concession 6, Former Township of North Grimsby being Part 1 on Plan 30R-13677.

The point of common coupling for the grid connection is located immediately adjacent to the site on Sobie Road (GPS Coordinates 43°08'54.76N, 79°32'32.29W). The transformer will operate at a nominal voltage of 27.6kV.

The location of the project is shown in Figure 1.

1.3 Surrounding Land Use

The area is generally used for agricultural purposes. In the immediate vicinity are a number of poultry and cattle farms. Immediately to the west of the subject property at the southeast corner of Sobie and Park Roads is a closed land fill site owned by the Region of Niagara. This site was closed in 1995. To the north is a radio transmission tower field. To the east is a poultry farm operation. The lands to the south of the property are wooded and contain a small watercourse. The watercourse is located some 500 meters south of south limit of construction. The closest part of the bush is 200 meters south of the limit of construction.

The nearest receptor is a farm house located on the west side of Park Rd south of Sobie Road. This home is located 385m from the limit of construction for the project and is separated from the project site by the closed landfill which is approximately 8m above grade.

The surrounding area is depicted on Figure 2. There are no ground water wells within 300m of the project site.

1.4 Site Description

The site is flat, sloping gently to the southeast. The site has no natural vegetation and has been used for growing crops in the past.

2.0 Facility Design Plan

The site plan for the project is depicted on Figure 3. The process flow is shown on Figure 4.

2.1 Digester System

The Anaerobic Digester proposed will operate in the mesophylic temperature range (38 to 43 degrees C).

The project to be constructed will be sufficient to produce 1MW of electricity for the grid. It will be built in two phases of 500kW each. While the design currently includes two reciprocating engines, the owner is currently examining the option of installing turbines.

The feedstock receiving system consists of 3 receiving bunkers on which the incoming farm materials such as silage, grass and solid manure will be stored. A 700m^3 in-ground storage tank will receive liquid manure on a regular basis.

The feedstock material will be injected into two plug flow digesters by a time and weight controlled auger system. The two digesters are each 25m in length with a height and width of 6m. Retention time in these digesters is 22 days.

The digestate is then transferred into two secondary digester vessels which each are 22 m in diameter and 6 meters high with a sealed concrete roof. Retention time in these vessels is 33 days. The material will then flow into the tertiary digesters for an additional 33 days of digestion.

Final storage after the tertiary digester is a 30m diameter, 6 m high storage vessel. This vessel is sufficient in size to store all of digestate produced in a six month period.

The biogas storage is located within a building for weather protection. A flare is provided to burn biogas should gas quality be below engine specifications or quantity above engine requirements.

The liquid digestate will be used by local farmers as a nutrient rich fertilizer. The solid fraction of the digestate will be separated and used as a soil amendment.

The building is designed to house the control room, gas clean up and pressurization, switchgear, heat manifold, a garage and the engines / turbines.

The transformer is located at Sobie Road adjacent to the point of common coupling.

2.2 Feedstock Materials

Annual Input		
Feedstock	**Amount (tonnes) 500kW**	**Amount (tonnes) 1MW**
Swine Manure	500	500
Poultry Manure	800	1,500
Dairy Liquid	3,000	3,000
Cattle Manure	500	1,000
Grape Pomace	2,000	6,000
Corn Silage	3,000	4,000
Grass Silage	1,000	1,000
FOG	2,000	5,000
Other	0	1,000
Total	**11,300**	**23,000**

. Non-farm sourced materials may also be utilized if available. Should material requiring pasteurization be available a pasteurization system will be installed.

2.2.1 Feedstock Receiving

Swine manure will be received in liquid form by tanker. Poultry manure is received in solid form every three months when barns are cleaned out.

Liquid dairy manure is received by tanker and will be received once every three weeks.

Corn silage is delivered on site over a 1 month period from mid August to mid September. Grass silage is delivered over the summer months.

The expected truck movements are as follows:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Silage Corn								65	65			
Silage Grass					5	10	10					
Dairy Liquid	9	9	9	9	9	9	9	9	9	9	9	9
Cattle Solid			10			10				15		
Swine Liquid		6				5				6		
Poultry solid		15			15			15			5	
Grape Pomace									60	140	35	
FOG / DAF	14	14	14	14	14	14	14	14	14	14	14	14
Other	3	3	3	3	3	3	3	3	3	3	3	3
Digestate Out			90	90	90				90	90	90	90
Total	**26**	**47**	**126**	**116**	**136**	**51**	**36**	**201**	**246**	**227**	**156**	**26**
Average/Day	**1.3**	**2.35**	**6.3**	**5.8**	**6.8**	**2.55**	**1.8**	**10.05**	**12.3**	**13.85**	**7.8**	**1.3**

2.2.2 Unloading and handling

Solid feedstocks are end dumped into the bunkers and compacted by tractor. This method is standard practice in the farm industry. Liquid material is deposited into the sealed receiving tank by camlock connection from the tanker.

Solid feedstock is transferred into the dry feeder system by front end loader. Liquids are pumped into the digester.

2.2.3 On Site Storage

The silage materials are packed into the bunkers and ensiled for storage and use over the remainder of the year. Bunkers will be full to capacity in mid September and virtually empty by August of the following year as the feedstock is used by the digester. Liquid input materials are stored on site for a period of three weeks as they are used up.

2.2.4 Feedstock Usage

Daily Feedstock Usage (Tonnes)	
Feedstock	**Daily Amount**
Swine Manure	1.4
Poultry Manure	4.2
Dairy Liquid	8.4
Cattle Solid	2.7
Corn Silage	10.8
Grass Silage	2.7
Grape Pomace	16.4
FOG / DAF	13.7
Other	2.7
Total	**63.0**

2.2.5 Waste Generation

The anaerobic digestion process does not produce any waste.

2.2.6 Digestate

Liquid digestate will be land applied by local farmers in the spring and fall of the year. Approximately 4,500 tonnes of liquid material will be transferred from the digestate storage into tankers over a period of two months each in the spring and fall. The digestion process results in the production of approximately 25 tonnes of liquid digestate per day.

Approximately 3,000 tonnes annually (8.2 tonnes per day on average) of separated solids will be sold to farmers as a soil amendment product. This material will be moved off site by truck on a regular basis.

2.3 Site Design

The site is designed to permit loaded trucks to enter the site and be weighed at the scale before discharging their material in the receiving tank or the bunkers. If necessary the truck can again be weighed as it leaves the site.

The site is designed to be convenient and efficient in all weather conditions, to minimize operational activities and for ease of operation and maintenance.

2.4 Plant Components

2.4.1 Solid Storage Bunkers

The bunkers for receiving corn and grass silage and solid manure are designed to be 20m wide, 3.6m high and 60m long to contain 12,900 m^3. Corn silage will be received from mid August to mid September and grass silage will arrive on site over the summer months. Solid chicken manure will be delivered 4 times per year. The solid materials will be placed into the dry feeder system daily and injected into the plug flow digesters at the pre-determined rate.

The bunkers are equipped with a drainage collection system to collect seepage from the silage and manure and direct it into the liquid input tank. Surplus rain water is collected in the holding pond before discharge.

2.4.2 Liquid Receiving Vessel

A 700 m^3 liquid receiving vessel is provided to receive liquid swine and dairy manure. Manure delivery will occur every three weeks. The liquid material is pumped into the plug flow digester on a timed basis to match the menu requirements. The receiving tank is heated to 25 degrees C and contains a mixer to prevent solids settling.

2.4.3 Plug Flow Digesters

For the initial 500kW phase of the project only one plug flow digester (900m^3 capacity) will be constructed. A second similar digester will be built as part of the second phase. Both digesters are 25m long, 6m wide and 6m high built entirely of concrete and sealed to prevent oxygen from entering the system. The digester is heated to 38^{o}C and the material is gently stirred by a large paddle type mixer. Retention time in the digester is 22 days.

2.4.4 Secondary Digesters

For the initial 500kW phase of the project only 1 secondary digester will be built. This digester is 22m in diameter and 6 meters high with a capacity of 2,281m^3. A

second similar digester will be built as part of the second phase. The secondary digesters are heated to 38^{o}C and contain submersible mixers for mixing. They are of solid concrete construction. Retention time in the secondary digester is 33 days.

2.4.5 Tertiary Digesters

For the initial 500kW phase of the project only 1 tertiary digester will be built. This digester is 22m in diameter and 6 meters high with a capacity of 2,281m^{3}. A second similar digester will be built as part of the second phase. The tertiary digesters are heated to 38^{o}C and contain submersible mixers for mixing. They are of solid concrete construction. Retention time in the tertiary digester is 33 days.

2.4.6 Solid Separation

Before the material flows into the digestate storage vessel, the solid fraction is separated to be used as a soil amendment product. It is estimated that some 3,000 tonnes of solid material will be retrieved from the digestate annually.

2.4.7 Digestate Storage

The digestate is stored in a sealed (concrete roof) vessel with a total capacity of 4,200m^{3} sufficient to store the digestate produced in six months.

2.4.8 Biogas Handling

Biogas is collected from each of the digesters and is stored in two cylindrical gas bags located in the gas storage building. The biogas bags and the concrete used in the digesters have a permeability of less that 500cm^{3}/m^{2}/day/bar. The dimensions of each bag are 30m long and 5m diameter and the gas pressure in the system will be at about 5mbar. The system will be protected by over-under pressure relief valves. These valves are connected to the alarm system and the central computer recording system. Before the biogas can be used in the engine it must be conditioned to reduce the moisture by a gas cooler. Condensate is pumped into the secondary digester. H2S is removed by injecting air into the head space and by passing the gas through a charcoal filter before utilization in the engines.

2.4.9 Engines

The selection of the engines / turbines has not been completed. Final decisions will be made after the tendering process is complete. Turbines are available from Capstone and engines are produced by many manufacturers. For CIA purposes, conservative generator characteristics will be assumed to permit maximum flexibility at the selection stage. Also the engine selection used in the noise and emission reports are conservative and typical for this type of installation in this location.

2.4.10 Heat Recovery

The engines will produce about 1MW of thermal energy in the form of heat. The engines will be equipped with a heat recovery system. Some of the heat will be used to heat the digesters, the building and input tank. The rest of the heat will be surplus to the plant and will be dissipated by the heat dump radiators .

2.4.11 Control System

The digester system is electronically controlled. The control room provides desk space for a computer that controls and records all aspects of the operation of the system. The system is also capable of being remotely controlled over the internet or by smart phone.

2.4.12 Switchgear

The engine room also contains the electrical switchgear that controls the quality of the power exported to the grid. A transformer is located beside the engine container.

2.4.13 Flare

In the event that surplus or poor quality gas is produced an automatic start flare capable of burning off the biogas is included in the design of the project.

2.4.14 Transformer

The transformer will operate at 27.6kV which will not require any noise buffering. It will be located adjacent to Sobie Road close to the PCC.

2.5 Facility Operations Plan

2.5.1 Start Up

When construction of the plant is complete, the digester will be filled with liquid dairy manure and heated to 38^{o}C with a temporary boiler. The initial biogas will be unstable in both quality and quantity and will be flared. When biogas production stabilizes, the engine will be started and commissioning completed.

2.5.2 Operation

While the operator can over ride the computer control system manually, the control system is designed to operate the plant automatically. Sensors and timers are used to start and stop equipment. All operations are recorded in the computer. In the event of a malfunction, an alarm signal will be registered and the operator notified automatically by telephone. In most cases the operator can adjust plant operation remotely by telephone or internet.

2.5.3 Daily Monitoring

The plant operator is provided with a schedule of inspections and maintenance actions to be performed daily, weekly and monthly. Gas quality testing is

undertaken on a daily basis. Initially samples of the digester material will be taken weekly and sent to a lab. As digester performance stabilizes the sampling is decreased until it occurs monthly. FOS/TAC testing is done weekly.

2.5.4 Preventative Maintenance

Preventative plant maintenance is carried out based on a pre-determined schedule. All moving parts are regularly greased and inspected. Engine maintenance is carried out under contract to the supplier.

2.5.5 Water taking

No water taking is required as part of the operation of the plant. Roof water will be collected from the roof of the building and used for equipment wash down or lawn watering. A 4,000 liter in ground tank will be installed for this purpose.

The amount of water used will be minimal and will be disposed of on the ground surface. No environmental effects are expected.

There are no potable water wells within 300 meters of the proposed facility.

2.5.6 Drainage

A small drainage collection pond will be constructed at the southern limit of the facility. This pond will be approximately 5 m by 10m in area and 1.5m deep and will serve as a sediment collection point before the water is naturally discharged to surface.

The grading of the site will maintain the surface drainage pattern currently existing on site. Silt fencing will be installed at the perimeter of the construction site before the commencement of work to ensure that no siltation or erosion occurs and affects surrounding land.

2.5.7 Sewage

Staff will only be on site for short periods each day doing undertaking routine monitoring activities, maintenance and loading the dry feeder. During bunker loading activity levels will increase. If necessary, portable toilet facilities will be provided. Permanent sewage works are not intended.

2.5.8 Liquid Digestate

Sealed liquid digestate storage for 6 months is provided on site. In the spring and fall the digestate storage vessel will be emptied. The material will be pumped into liquid tankers and spread on local farmer's fields as a high quality, weed seed free liquid fertilizer. As the digestate is largely odour free, no emission issues are expected with the onsite transfer to tankers.

2.5.9 Separated Solids

The separated solids will be removed from site periodically. Odour discharge from this digested product is minimal.

2.5.10 Air Emissions

As all of the digesters, receiving vessels, and storage vessels are sealed, air emissions are limited to the following sources:

2.5.10.1 Engines / Turbines

Air emissions will occur from the exhaust stack(s) of the power plants to be installed. The engines will meet the requirements of the applicable regulations and the dispersion modeling indicates that the emissions are satisfactory.

2.5.10.2 Flare

The candlestick flare will be designed to burn 100% of the biogas produced by the plant (485 m^3 per hour). The flare will start automatically when the gas is of low quality or exceeds the capacity of the engines. It is connected to the alarm system and its use is recorded in the computer system.

2.5.10.3 Over pressure valves

The biogas system is equipped with over –under pressure relieving valves. These valves will release biogas to atmosphere in the event of an over pressure situation. The valves will only operate in the event both engines and the flare are inoperable. They are connected to the alarm system and the event recorder.

2.5.10.4 Bunker Storage

When the bunkers are filled with corn silage, grass and manure, there will be an associated smell. The materials and methods employed are those used in normal farm operations in the vicinity. As there are no receptors within 300m of the storage site, odour impact will be minimal. The bunkers are covered with a plastic weatherproof cover to protect the silage with the result that there is no odour after the bunker is covered.

2.5.10.5 Input Tank Displacement Air

The liquid feedstock is delivered to site in a sealed truck and transferred to the receiving tank via camlock connection. As a consequence there is no odour escape. As the tank is filled there will be some air displacement. Any associated odour is a normal manure smell which is common in the area and will be limited in duration while the tank is being filled. Should odorous materials such as DAF or FOG be used as

feedstock, the displacement air will be passed through a charcoal filter before discharge.

2.5.10.6 Other Discharges

Used engine oil, filters, charcoal filter material and similar materials will be disposed of in accordance with applicable regulations.

2.6 Transformer

The 1500Kva transformer which will be employed in this application contains approximately 2200 litres of oil and is located at the frontage of the property close to the PCC. Should the transformer rupture and spill oil, First Response Environmental, Grimsby Energy's contracted responder would be called to deal with the spill. The area would be barricaded off to keep unauthorized personnel from entering and the equipment would be de-energized if necessary. Any oil spill would be contained to prevent spreading of the oil using oil absorbing materials. Any flowing water in the vicinity would be diverted away from the spill area. A suction truck would be used to pick up any remaining oil and to excavate any impacted soil. All materials would be disposed of in accord with environmental requirements. If the spill exceeded 100 litres the Ministry of Environment Spills action Centre would be notified immediately.

2.7 Secondary Containment

The site design does not include secondary containment for the vessels because all of the requirements of the Nutrient Management Act Regulation 267-03 Part 8 are met in the design of the project:

- The soils are hydraulically secure for more than 1.0 meters below the vessel floors.
- A professional engineer will design the structure and monitoring systems in accord with the regulation.
- The facility will be designed to minimize the potential for leakage
- The concrete used in the facility will be appropriate for the environmental conditions of the operation and durability required
- The floor of the nutrient storage facility will have a thickness of 125mm unless specified otherwise by the engineer.

3.0 Environmental Effects

Anaerobic Digestion is a positive environmental initiative as it

- reduces greenhouse gases,
- eliminates contaminated run off from manure spreading operations
- removes organics in the waste steam from landfill sites
- results in electricity and heat from a sustainable non-fossil fuel source
- results in a digestate that is highly desirable as an organic fertilizer
- eliminates odours from the manure composting operation.
- most pathogens within the input stream are destroyed.

- all weed seeds within the input stream are destroyed reducing reliance on harmful herbicides.

The potential negative effects of this project are:

Negative Effect	Performance objective	Mitigation
Noise from the engines	Meet Provincial Standard	The engine room, heat dump radiator and the exhaust stack will be designed in accordance with Provincial noise standards.
Odour	Meet Provincial standard	Input tanks are closed to minimize the possibility of fugitive odour emissions. Digestate is largely odour free. Setback requirements and biogas storage permeability requirements are met. See also the odour study report
Engine / flare emissions	Meet Provincial standard	The engine and flare emissions will be designed to meet Provincial standards. See also the ESDM report.
Spills	None	The potential for spills at the site are minimized by the design of the plant. Camlock connections ensure that the possibility of spillage is minimized. All tanks are of tie-less design to prevent leakage and are equipped with a monitoring system.
Siltation control	None	Silt fencing will be installed at the perimeter of the construction site. After construction is complete, the disturbed area is to be seeded to prevent erosion from occurring.

Neither the construction of the project nor its long term operation will have a negative effect on the surrounding environment. The woodland to the south will remain untouched. There are no archeological or heritage resources identified in the area. No ground water will be taken.

3.1 Monitoring

The entire biogas facility is visually checked daily by the operator and any issues are documented and repaired as required. The facility operator is also provided with a cell phone that is directly connected to the facility alarm system. As a result the plant is monitored 24-7 and any repairs required can usually be completed by telephone or internet connection.

The monitoring wells are inspected daily to ensure that no tank leakage is occurring. Should leakage be detected the identified tank and the associated monitoring well can immediately be pumped empty to permit repairs to be made. The incident will be recorded and MOE advised.

3.2 Communications

During the construction of the project, the owner will appoint its representative to b e the sole spokesperson for the organization and be responsible for all communication with respect to the construction of the project. The contractor's representative will regularly communicate with the spokesperson with respect to the status of the construction. If there are issues that need to be communicated to a wider audience, the owner will be advised and the communication strategy will be developed. Depending on the nature of the issue, communication will be undertaken with MOE and any other party that may have an interest.

As Grimsby Energy Inc. is owned by the Town of Grimsby, issue communication will be co-ordinated through the Town's facilities.

A sign will be posted on site with the name and contact information for the owner's representative and the contractor. In addition key emergency information such as fire, police, ambulance and spills centre will be on the sign. Any emergencies during construction will be handled in accordance with the emergency plan developed by the contractor.

All correspondence to the owner received from the public or agency will be recorded by Grimsby Energy Inc. and a response provided. Spills will be reported to the MOE's Spills Action Centre.

3.3 Financial Assurance

No financial assurance is required as the proposed plant will run on organic farm materials only.

Should the plant decide to install a pasteurization system at a later date in order to accept DAF, FOG or similar materials financial assurance will be required. The maximum amount of unpasteurized FOG, DAF etc that the plant would be designed for is 70 cubic meters in the input tank and 30 cubic meters in the pasteurizer itself. As a result the maximum financial assurance required would be based on a volume of 100 cubic meters.

The price for removal and disposal of this material is quoted at $170 per cubic meter (see appendix 1) for a total of $17,000 plus 10% contingency for a total of $18,700.

4.0 Summary

Design and Operations Report per table 1 of Ontario Regulation 359-09

1. Set out a site plan of the project location at which the renewable energy project will be engaged in, including,	
i. one or more maps or diagrams of,	
A. all buildings, structures, roads, utility corridors, rights of way and easements required in respect of the renewable energy generation facility and situated within 300 metres of the facility,	**See Figure 1**
B. any ground water and surface water supplies used at the facility,	**None**
C. any things from which contaminants are discharged into the air,	**Section 2.5.10**
D. any works for the collection, transmission, treatment and	

disposal of sewage,	**None**
E. any areas where waste, biomass, source separated organics and farm material are stored, handled, processed or disposed of,	**Figure 3**
F. the project location in relation to any of the following within 125 metres: the portion of the Oak Ridges Moraine Conservation Plan Area that is subject to the Oak Ridges Moraine Conservation Plan, the area of the Niagara Escarpment Plan, the Protected Countryside, the Lake Simcoe watershed, and	**Project is not within 125 meters of any of these locations.**
G. any noise receptors or odour receptors that may be negatively affected by the use or operation of the facility,	**Nearest receptor is 360 m to the northwest. See figure 2**
ii. a description of each item diagrammed under subparagraph i,	
iii. one or more maps or diagrams of land contours, surface water drainage and any of the following, if they have been identified in complying with this Regulation: properties described in Column 1 of the Table to section 19, heritage resources, archaeological resources, water bodies, significant or provincially significant natural features and any other natural features identified in the Protected Countryside or in the portion of the Oak Ridges Moraine Conservation Plan Area that is subject to the Oak Ridges Moraine Plan,	**Section 2.4** **Figures 1 and 2** **No heritage resources in the vicinity** **No archeological resources** **No water bodies within 120 m** **Not within the Greenbelt Plan or Oak Ridges Moraine**
iv. a description, map or diagram of the distance between the base of any wind turbines and any public road rights of way or railway rights of way that are within a distance equivalent to the length of any blades of the wind turbine, plus 10 metres,	**N/A**
v. a description, map or diagram of the distance between the base of any wind turbines and all boundaries of the parcel of land on which the wind turbine is constructed, installed or expanded within a distance equivalent to the height of the wind turbine, excluding the length of any blades, and	**N/A**
vi. a description, map or diagram of the distance between the base of each wind turbine and the nearest noise receptor.	

2. Set out conceptual plans, specifications and descriptions related to the design of the renewable energy generation facility, including a description of,	**N/A**
i. any works for the collection, transmission, treatment and disposal of sewage, including details of any sediment control features and storm water management facilities,	**Figure 3**
ii. any things from which contaminants are discharged into the air, and	**Section 2.5.10**
iii. any systems, facilities and equipment for receiving, handling, storing and processing any waste, biomass, source separated organics, farm material and biogas.	**Figure 3**
3. Set out conceptual plans, specifications and descriptions related to the operation of the renewable energy generation facility, including,	
i. in respect of any water takings,	
A. a description of the time period and duration of water takings expected to be associated with the operation of the facility,	**N/A**
B. a description of the expected water takings, including rates, amounts and an assessment of the availability of water to meet the expected demand, and	**N/A** **N/A**
C. an assessment of and documentation showing the potential for the facility to interfere with existing uses of the water expected to be taken,	**N/A**
ii. a description of the expected quantity of sewage produced and the expected quality of that sewage at the project location and the manner in which it will be disposed of, including details of any sediment control features and storm water management facilities,	**No sewage produced** **Sediment control section 2.5.6**
iii. a description of any expected concentration of air contaminants discharged from the facility,	**Storm water management 2.5.6**
iv. in respect of any biomass, source separated organics and	

farm material at the facility,	
A. the maximum daily quantity that will be accepted,	**Section 2.5.10**
B. the estimated annual average quantity that will be accepted,	**Section 2.2**
C. the estimated average time that it will remain at the facility, and	**Section 2.2** **Section 2.2**
D. the estimated average rate at which it will be used, and	**Section 2.2**
v. in respect of any waste generated as a result of processes at the project location, the management and disposal of such waste, including,	**Section 2.2** **No waste generated**
A. the expected types of waste to be generated,	**N/A**
B. the estimated maximum daily quantity of waste to be generated, by type,	**N/A**
C. processes for the storage of waste, and	**N/A**
D. processes for final disposal of waste.	**N/A** **N/A**
4. Include an environmental effects monitoring plan in respect of any negative environmental effects that may result from engaging in the renewable energy project, setting out,	
i. performance objectives in respect of the negative environmental effects,	**Section 3.0**
ii. mitigation measures to assist in achieving the performance objectives mentioned in subparagraph i,	
iii. a program for monitoring negative environmental effects for the duration of the time that the project is engaged in, including a contingency plan to be implemented if any mitigation measures fail.	**Section 3.0** **Section 4.0**
5. Include a response plan setting out a description of the actions to be taken while engaging in the renewable energy project to inform the public, aboriginal communities and municipalities, local roads boards and Local Services Boards with respect to the project, including,	**Section 4.0**

i. measures to provide information regarding the activities occurring at the project location, including emergencies,	
ii. means by which persons responsible for engaging in the project may be contacted, and	**Section 5.0**
iii. means by which correspondence directed to the persons responsible for engaging in the project will be recorded and addressed.	**Section 5.0**
6. If the project location is in the Lake Simcoe watershed, a description of whether the project requires alteration of the shore of Lake Simcoe, the shore of a fresh water estuary of a stream connected to Lake Simcoe or other lakes or any permanent or intermittent stream and,	**Section 5.0** **N/A**
i. how the project may impact any shoreline, including the ecological functions of the shoreline, and	
ii. how the project will be engaged in to,	**N/A**
A. maintain the natural contour of the shoreline through the implementation of natural shoreline treatments, such as planting of natural vegetation and bioengineering, and	
B. use a vegetative riparian area, unless the project location is used for agricultural purposes and will continue to be used for such purposes.	**N/A** **N/A**