

***Terms of Reference
for the Siting of Wind Farms
on Farmland and in Woodlands***

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Foreword

In an effort to carry out its projects in cooperation with host communities, Hydro-Québec has adopted a number of rules of conduct and tools that provide a framework for its actions in this regard. They also reflect its commitment to sustainable development.

In 1986, Hydro-Québec and the Union des producteurs agricoles (UPA) signed the *Agreement on the Siting of Power Transmission Lines on Farms and in Woodlands*. Given the need for Hydro-Québec to build certain facilities on farmland and in woodlands, the agreement defines specific rules on the siting of electrical transmission facilities on farmland as well as the applicable compensation measures during such projects. Since it came into effect, the agreement has proven to be highly efficient. The principles and procedures contained in the agreement are now recognized by the communities, and other companies are using them as a basis for their own projects.

In the summer of 2005 and subsequent to the filing by the Québec government of a draft regulation authorizing Hydro-Québec-Distribution to launch a call for tenders for the purchase of 2,000 MW of wind power, the UPA communicated its concerns to Hydro-Québec regarding the conditions and the practices used for the implementation of wind turbines on farms and in woodlands. For instance, the UPA emphasized that there was no reference document similar to the one used for transmission lines that would define the relations between farmers and wind farm developers.

Using the principles contained in the agreement on power transmission lines as a basis, and further to discussions with UPA representatives, Hydro-Québec has developed the *Terms of Reference for the Siting of Wind Farms on Farmland and in Woodlands*. This document proposes methods of intervention, procedures and measures to farmers and wind farm developers mainly pertaining to:

- The siting of wind farm structures;
- Mitigation of the impacts related to construction and dismantlement;
- Mitigation of the impacts related to wind farm maintenance;
- Compensation for landowners.

The terms of reference also contain a sample Option agreement and Deed of superficies in the appendices.

Hydro-Québec hopes that these terms of reference will further discussions between farmers and wind farm developers and that they may use these terms as a basis for developing agreements on wind farm projects on farmland and in woodlands.

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- A1 Option contract
- A2 Deed of superficies

B Future harvest yields from private forests

Chapter 1 – Impacts of structures

1.1 Introduction

Development and operation of wind farms may cause impacts on farmlands. The impacts can be subdivided into three broad categories.

First, there are the impacts associated with the construction of the wind farm. Such impacts vary according to the type of structure and farm operation and, to a certain extent, according to the nature of the soil. They can be reduced considerably or eliminated altogether through the implementation of appropriate preventive or remedial mitigation measures (see Chapter 3 on mitigation measures).

Second, the impacts resulting from the presence of the wind farm in the environment can differ according to the type of farm operation. Although these impacts cannot be eliminated, they can be attenuated in some cases by selecting optimal sites (see Chapter 2 on the siting of the structures).

Finally, some impacts are produced during the dismantlement of the wind farm at the end of its useful life. As those during construction, these impacts vary according to the type of farm operation and nature of the soil. These impacts can also be considerably reduced or eliminated through the implementation of appropriate preventive or remedial mitigation measures (see Section 3.4.7 on dismantlement measures).

1.2 Types of impacts

1.2.1 *Temporary impacts during construction*

The work done during construction of the wind farms will have an impact on farmland and woodlands. The main work consists of the following:

- Construction of access roads;
- Construction of foundations required for wind turbine assembly;
- Construction of collector system (underground or overhead)¹.

Following are some of the impacts that can arise during the construction phase:

- Impacts associated with the staking of rights-of-way;
- Decrease in surface areas available for crops;
- Reduced crop yields due to soil compaction;

1. Collector system: Conductors and other components of the wind farm electrical system that connect the wind turbines. The system is designed to transfer the electricity generated to a switchyard. In general, an underground collector system is used for farmland and an overhead system for wooded areas.

- Disturbance of the topsoil layer (rocks and inert soil mixed in with the topsoil);
- Alteration of underground or surface drainage systems;
- Alteration of irrigation systems;
- Damage to ditches;
- Broken fences, which can also hinder livestock control;
- Noise produced by construction machinery, which can affect poultry and fur-bearing animals;
- Temporary disruption of certain crop operations;
- Damage to farm roads;
- Cut wood;
- Ruts and soil compaction;
- Damaged trees;
- Waste materials and construction debris.

1.2.2 Permanent impacts resulting from the presence of the structures

Impacts stemming from the presence of the wind farms in the environment include:

- Loss of farmland or woodland;
- Loss of revenue, which may compromise the operation's profitability;
- Loss of time (related to having to drive around the structures, for instance);
- Risk of farm machinery running into the structures;
- Creation of enclaves;
- Usage restrictions and other limitations associated with easements;
- Alteration of irrigation systems;
- Changes to crop operations;
- Impossibility or increased danger of using airplanes for agricultural purposes;
- Limitations regarding land improvements (e.g. leveling, mechanical operations, ditching);
- Proliferation of weeds;
- Risk of windthrow and desiccation along rights-of-way in wooded areas;
- Visual impact;
- Noise from wind turbine operation.

1.2.3 Temporary impacts during dismantlement

At the end of the wind farm's useful life, all of the facilities (including the collector system) will be removed from the site. The temporary impacts resulting from this work will be comparable to those associated with the construction phase.

Chapter 2 – Siting of structures

2.1 Introduction

This section of the terms of reference summarizes the main criteria involved when determining the siting of wind farm facilities on farmlands.

In determining the best location for the facilities to be built, the wind farm proponent strives to reduce their impact on various elements in the host environment to the greatest extent possible. Environmental impacts can be reduced to a minimum through joint planning with farmers to site the wind turbines, the overhead and underground lines and the access roads.

2.2 General considerations

Choices of sites must be made in cooperation with stakeholders in the agricultural industry. The application of siting criteria can vary from region to region, depending on the type of project as well as the existing and foreseeable use of the area in question.

Siting criteria must be applied in such a way as to cause the least inconvenience to farmers, while striving to establish the shortest possible distance between the structures and the collector system.

2.3 Siting criteria applicable to farmland

The choice of wind turbine locations and the collector system route on farmlands must comply with the following criteria:

- Favor the siting of wind turbines and lines on the boundaries of or outside agricultural zones protected under the *Act respecting the preservation of agricultural land and agricultural activities*;
- Favor siting of the structures on agricultural land with the lowest potential, according to maps of potential prepared by the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec (Québec department of agriculture, fisheries and food, or MAPAQ);
- Protect sugar bushes, orchards, plantations, woodlands under development, windbreaks and other high- and average-quality woodlands in the study area, while bearing in mind that a right-of-way in this type of woodland can be developed;
- Favor siting in poor-quality woodlands rather than on cultivated land;
- To minimize the loss of cropland, favor the installation of wind turbines alongside fields and, where possible, favor orientation along lot, concession or any other cadastral lines and avoid running routes diagonally across crops;

- Protect land that has or will have underground drainage in the short or medium term according to data available from the MAPAQ;
- Install structures away from farm buildings and fish breeding ponds;
- Avoid areas that are subject to erosion.

The above siting criteria are not listed in order of importance. Their application shall vary from one region to another, depending on the nature of the project and the site (existing and foreseeable).

The shortest line routes with the fewest angles possible must be chosen in cooperation with agricultural stakeholders.

2.4 Cooperation and mediation

To favor mediation and mutual agreement, agricultural and forestry producers and the proponent who are under contract for the purpose of realizing a wind farm project may mandate by mutual agreement the UPA Regional Federation for the territory affected by the project in order to designate a *UPA representative at the work site*.

Once construction work begins, the UPA representative at the work site will be responsible for such aspects as acting as liaison between the proponent, its duly designated agent, and the landowners so the work that is being carried out complies with the parameters agreed upon by the parties or those stipulated in the *Terms of Reference on the Siting of Wind Farms on Farmland and in Woodlands*.

The proponent, the farmers and the UPA Regional Federation will agree on the specific mandate given to the UPA representative at the work site as well as the duties and remuneration of the designated representative. As applicable, the duties may consist of the following:

- The UPA representative may visit the premises and speak to the landowners before the work begins;
- The UPA representative may go to the work site during construction, complying with safety guidelines and informing the proponent or its agent in advance;
- At the request of a farmer or the proponent, the UPA representative may meet directly with a farmer. However, the UPA representative will need to be in constant touch with the proponent or his representative and inform him systematically of the progress of the discussions;
- The UPA representative may not, either directly or indirectly, communicate with the contractor in charge of the work. In the event of a problem, the UPA representative shall contact the proponent or his representative.

The mandate of the UPA representative at the work site shall end once construction has been completed.

Chapter 3 – Mitigation measures

3.1 Introduction

This section deals with mitigation measures intended to reduce the impact of the construction and operation of wind farms on farmland and in woodlands.

These measures also apply, with the necessary adaptations, to the dismantling of a wind farm.

Obviously, a proponent cannot completely eliminate disturbances on farms and in woodlands because of the very nature of the work and the type of equipment used. However, by applying the protective, remedial and restoration measures set out here, it can prevent various problems and limit the impacts of its projects.

The proponent is committed to ensuring that these directives are followed by its employees and included in its contracts with contractors. It assumes responsibility for having the measures and the land restoration carried out in accordance with these terms of reference.

3.2 General principles

The mitigation and remedial measures must enable the proponent to restore the site to its original state, insofar as is physically possible, once construction has been completed.

In particular, mitigation measures are intended to restore the original fertility of cultivated land. Altered or disturbed areas are therefore leveled as quickly as is reasonably possible, unless agreement to the contrary is reached with the landowners. All construction debris is also removed from the site.

The measures outlined below focus on damage prevention and describe the methods used to rectify whatever damage may occur.

On site, the construction manager appointed by the proponent shall be responsible for ensuring compliance with these terms of reference. He oversees the implementation of all environmental protection measures and any special agreements reached with the landowners. The construction manager also deals with the landowners during clearing, construction and site restoration.

The proponent shall assign qualified advisory staff to each construction manager. Each construction manager shall also be assigned a person who is qualified to assess construction damage and make settlements with owners.

The construction manager shall be responsible for:

- Ensuring compliance with mitigation measures, obligations assumed or imposed under government permits, and agreements with landowners;
- Promptly rectifying problems that may arise on farms and in woodlands during construction;
- Ensuring that structures (wind turbines, buildings, etc.) are located as stipulated on the drawings and specifications;
- Ensuring that all authorizations have been obtained before work begins on private property;
- Recommending preventive measures to limit the impact of construction, for example, with respect to soil compaction and topsoil thickness;
- Taking the necessary measures to ensure that land and access roads are restored to their original state or better, within a reasonable time;
- Maintaining contact with owners in order to inform them of the progress of the work.

The proponent shall notify each landowner at least two weeks prior to the start of work on his property. Subsequently, the construction manager shall maintain contact with the owners and coordinate the work in such a way that it interferes as little as possible with farming operations.

The proponent must obtain permission from landowners before using property or infrastructure outside the wind turbine or collector system right-of-way for any operation or purpose.

The proponent and the owner must draw up a list of installations and structures that may be affected by construction work and apply the appropriate preventive measures.

As per Section 2.4, UPA representatives duly mandated by the landowners and duly authorized MAPAQ representatives may enter the construction site. For safety reasons, they must obtain permission from the construction manager designated by the proponent and be accompanied by the manager's representative.

Through meetings and written directives, the proponent shall inform its personnel and the contractor's personnel of special measures to take on farms and in woodlands.

When damage occurs despite preventive measures taken by the construction manager and his crew and despite the application of remedial measures, site personnel specialized in this field shall assess the damage and promptly compensate the landowners.

3.3 General clauses

3.3.1 Noise

During construction, the proponent shall bear in mind the inconvenience caused by noise and make efforts to reduce it. He shall observe any noise regulations in effect.

Prior to beginning the work, the proponent shall identify zones where special noise restrictions apply and indicate them in the drawings and specifications. Preventive measures shall be included in the special contract clauses and the zones clearly marked off.

Near livestock operations that are potentially sensitive to noise (e.g. raising of poultry, rabbits or fur-bearing animals), precautions shall be taken to limit strident or sudden noise from dynamiting, aircraft, machinery and motor vehicles.

Should noise problems arise during construction, measures shall be adopted to attenuate their impacts.

3.3.2 Farm or access roads

The proponent must obtain permission from the landowner before using or building an access road outside the right-of-way. The agreement with the landowner shall include conditions governing the use of the access road.

The proponent shall clearly indicate the access roads on the site. He shall install the infrastructure for such roads and maintain it for the duration of the works.

When the use of an access road produces dust that is harmful to individuals or the environment, dust-control measures shall be taken.

When construction has been completed, the roads shall be restored to their original state or better. Under normal use, one year (one freeze-thaw cycle) must elapse before the proponent's responsibility for restoring the roads lapses.

Paved roads shall be protected from damage and kept clean at all times.

Where material is required to fill ruts, it must be of the same size and type as the material used in the road. The proponent shall bring in the material or take it from sites that the landowner has approved.

3.3.3 Fences and gates

After reaching an agreement with the owner, the proponent shall install gates or temporary fences at various locations where necessary to protect crops, livestock and property.

Fences running along public access roads must have rigid gates to prohibit unauthorized access to the work site outside of working hours.

The proponent may use one of the following procedures as regards electric fences:

- Install an arch;
- Modify the power supply so as to supply the fence from both sides of the gate.

It may employ any other method that satisfies the owner.

The following method shall be used to install gates:

- Shore up the posts on either side of the opening to maintain mechanical tension in the adjacent spans;
- Manually cut the wire and, if it is suitable, use it to build the gate; otherwise, the wire will be gathered up and replaced with material of equivalent or higher quality to build the gate.

The proponent shall ensure that the contractor properly maintains the gates and keeps them closed at all times.

Any fence or gate that is cut, removed, damaged or destroyed shall be immediately repaired or replaced with material of equivalent or higher quality.

When construction has been completed, the temporary gates shall be removed, unless an agreement to the contrary is reached with the owner. Gates shall be rebuilt with material of equivalent or higher quality; props shall be left in place.

If stone or pole fences have to be dismantled, the material shall be stored and re-used when the fence is restored once the work has been completed.

The proponent shall maintain adequate protection systems for livestock. Any fence needed to keep out particular kinds of animals must be described in the specific mitigation measures.

3.3.4 Surface drainage

The proponent shall take stock of drainage on land where construction is to take place and shall install any bridges, culverts, fords or drainage diversions needed to ensure normal, continuous drainage in ditches, trenches or other channels affected by construction.

The proponent shall obtain the landowner's permission before using an existing bridge or culvert and shall properly maintain any bridges or culverts and carry out the necessary repairs.

An agricultural engineer or the proponent's agricultural representative on the site must approve any change in surface drainage anticipated for the duration of construction.

Throughout construction, the proponent must ensure that surface drainage systems remain in working order and that ditches are kept free from obstructions.

Culverts installed by the proponent must be at least 3.5 m long, installed 10 cm below the bottom of ditches and covered with at least 30 cm of earth. Moreover, they must be wide enough to allow water to flow freely.

If a bridge deck is installed, it must cover the banks sufficiently to ensure their stability.

Once construction is completed, unless an agreement to the contrary is reached with the owner, the proponent shall remove the bridges and culverts that were temporary installed, clean ditches and restore banks to their original state.

Before construction begins, the proponent shall identify wells and sources of drinking water that may be affected by construction work and, if need be, establish specific mitigation measures to protect them. Water samples shall be taken prior to, during and after construction to ensure that the quality and quantity of water are unaltered. In the event of a decrease in water quality or quantity, the proponent shall take the necessary steps to eliminate the cause of contamination or reduced water flow.

The proponent must remove any accumulation of sediments in a ditch or waterway resulting from construction and affecting the normal flow of drainage systems.

3.3.5 *Underground drainage*

Before construction commences, the proponent shall locate underground drainage systems in the work zone, based on indications supplied by the owner.

During construction, the proponent shall ensure that roads on the land are not built over the drains.

On land with low bearing capacity, areas where drains are crossed by roads shall be protected.

Should drains be punctured during excavation, uninterrupted flow must be assured in upstream drains and a plug installed in the downstream drain to prevent permanent or temporary obstructions. A marker must be left in place until the drain is repaired.

Before the excavation is filled, the proponent shall repair any damaged drains and ensure that the drainage system is operating properly, according to MAPAQ standards governing drains. If ruts are created and there is a risk of the drains collapsing, the landowner may demand that they be verified by excavation.

If a damaged drain must be repaired, the proponent shall notify the owner so that he can be present during the repair. For extensive repairs, the proponent or the owner may request that they be done by a specialized contractor. Both parties must approve the repair work before filling.

In the case of an underground drainage plan yet to be developed that must be altered because of the construction work, the proponent shall have the designer modify the drainage plan at its expense.

The following year, in the spring and fall, the proponent shall return to the site with the owner to verify the proper operation of the drainage system affected by the construction.

3.3.6 Traffic on the land

This measure applies solely to cultivated land.

The location of the access roads is determined on the basis of the least impact on farming operations, and, wherever possible, the roads are located alongside fields with an orientation along lot, concession or any cadastral lines, while avoiding having routes run diagonally across crops.

The road to be used by the contractor over the land must be established in advance by the proponent. These access roads shall, in some cases (e.g. sensitive areas, special arrangements made with the owner), be marked out on the site.

The proponent shall ensure that the access roads do not prevent the owner or occupant from entering neighboring fields. Ruts shall be leveled if they hinder farm operations.

Depending on the season and the nature of the soil, the proponent shall restrict access by vehicles and machinery that are too heavy to travel on the land without disturbing it.

When construction has been completed, the proponent shall remove the temporary structures and restore the land to its original state, according to the requirements stipulated in Section 3.3.2 on farm or access roads.

3.3.7 Soil compaction

This measure applies solely to cultivated land.

Under certain unfavorable conditions (such as soaked soil, winter thaws, etc.), construction work may compact the soil to a greater or lesser degree, depending upon stoniness, vegetation and soil type. To minimize damage, the following measures are advocated:

- Schedule the work during seasons when the bearing capacity of the soil is best;
- Restrict access by certain vehicles or machinery if the soil has insufficient bearing capacity;
- Use only track vehicles or vehicles with extra-wide tires;
- Limit traffic to one lane and keep the number of vehicle trips to a minimum;
- Use a bearing mat or mattress;
- Suspend certain phases of the work when conditions are unsatisfactory;
- Implement any other relevant method recommended by the agricultural specialist.

When construction has been completed, the proponent shall apply as needed the measures provided for in Section 3.4.6 with regard to site restoration.

Should soil compaction occur despite the proposed measures, the proponent shall decompact the soil once the work has been completed, according to the measures in Section 3.4.6 on site restoration.

3.3.8 Smoke, dust and other pollutants

The proponent shall ensure that the contractor's equipment operates according to the manufacturer's specifications. Should problems arise during construction, the proponent shall take remedial action such as the application of dust-control products, the installation of filters or the withdrawal of certain equipment.

Equipment must be free of leaking oil, gasoline or other pollutants. Dumping and burying of these products are prohibited. When work commences, the proponent shall give the contractor a used oil recovery log and shall check it throughout the project.

In the event that a pollutant is accidentally spilled as a result of a defect or mechanical breakdown, the area affected must be quickly cordoned off and the product flow stopped with an absorbent material. If need be, the affected topsoil shall be removed and replaced with topsoil from an authorized site.

Clean-up, especially at each support structure site, shall be an integral part of each phase of construction. Machinery must be equipped with waste containers.

On farms, no burning or burying of waste from the site shall be permitted. Such refuse must be transported to an authorized dump. In woodlands, waste burning and stump burying may be authorized.

3.4 Clauses pertaining to construction

3.4.1 Surveying

On cultivated land, stakes indicating structure locations shall normally be driven into the ground near fences or ditches close by.

When no such landmarks are available, the proponent shall drive 30-cm wooden stakes all the way into the ground so that farm equipment does not catch on them.

Stakes driven into cultivated land must be clearly visible so that farmers can remove them, if need be, for tilling and harvesting.

3.4.2 Clearing

The proponent shall ensure that clearing causes the least possible disturbance and allows for the orderly disposal of unusable waste wood.

Clearing methods A, B and C shall be clearly indicated on the site and must be complied with:

MODE A All trees, bushes and brush higher than 1 m are cut manually or mechanically.

MODE B All bushes up to a height of 3 m, except the stems of species that grow too quickly, are preserved, as well as the stumps and root systems of cut trees. Stacking is not permitted in these areas. Where mechanized equipment is required, it must exert little pressure on the ground and always travel on the same path.

MODE C Only manual, selective cutting is done, and the maximum height of trees to be preserved is indicated for each area. Trees exceeding this height must be cut down, trimmed, cut into sections and left in the undergrowth with cutting residues. For the collector system, a strip 5 m wide must be cleared in the centre of the right-of-way to allow for conductor unwinding.

Clearing methods B and C are recommended for sensitive areas such as peat bogs, riverbanks, erosion areas and so on, and for sites with sufficient space to leave the trees or in areas where screens are required for esthetic reasons.

Trees shall be felled so that they fall inside the work areas or the collector system right-of-way to avoid damaging the unfelled trees.

The contractor must burn, chip or remove from the right-of-way all waste, stumps, crowns, brush, branches and other wood debris.² Burying them on site or stacking them on the edge of the woodland is prohibited unless the owner's express consent has been obtained.

Main branches that are broken must be cut clean near the trunk to promote rapid scarring. Damaged trunks must also be properly treated.

Wood must be cut to commercial length for pulp or saw timber, i.e. 4 feet, 6 feet, 8 feet, 10 feet, or 12 feet or more, depending on the requirements of the local market and the owner's wishes. The wood must be stacked either along the construction road or in a place agreed upon in advance by the owner and the proponent and located within 100 m of the cutting site. In all instances, the cut wood must not be moved more than 100 m.

It is understood that the landowner may recover all or part of the wood, at his expense and risk, as it is cut, provided that the wood is not to be used for some other purpose by the proponent or its representatives.

The proponent shall ensure that areas in which clearing methods B and C were used are properly restored.

The proponent may have the landowner undertake the initial clearing, for remuneration equivalent to the average price paid by the proponent for such work.

3.4.3 Excavation

This measure applies to cultivated land.

On the excavation site, the topsoil must be separated from the inert soil and dumped in a place where it can be recovered. The thickness of the layer of topsoil to be removed shall be established on the basis of agricultural practice but must not exceed 30 cm.

Should excavated material not be used as fill, it must be dumped in an authorized place or a place agreed upon with the owner, in accordance with environmental standards. However, if the material is to be used as fill, it must be stored temporarily. It must not be mixed with topsoil. To this end, the surface topsoil should first be removed at the storage site and placed on a membrane.

2. This directive does not apply to stumps in forests.

Should backfilling require granular material, the latter shall be deposited as needed in the excavation. If it is necessary to store granular material on the construction site, the surface topsoil must first be removed.

Traffic around the excavation sites shall be kept to a minimum. Work shall be planned so as to avoid mixing inert soil and topsoil. Piles of topsoil dumped at the foot of structures must not exceed 15 cm in height in relation to the surrounding soil, which is sufficient to compensate for differential settling. Should inert soil and topsoil be mixed despite the precautions taken, the first 30 cm shall be replaced by arable soil from an area approved by the proponent and landowner, and measures shall be taken to restore fertility. The same applies should gravel be spread accidentally.

Precautions must be taken to ensure that sediment pumped out of excavations does not spread into waterways or neighboring ditches. The pumped water shall be placed in ponds with filtering membranes; sediment shall be disposed of as it is removed, by truck or any other means such as a separating pump.

Fences shall be built around unsupervised excavations. They must be safe and adapted to surrounding conditions.

Fill material shall be compacted in accordance with specifications and the layer of topsoil shall be restored to its original thickness.

If rocks come to the surface as a result of excavation, they shall be removed from the site either mechanically or manually, until the condition of the site is similar to that of the surrounding area. The material gathered up shall be disposed of at an authorized site or a place accepted by the two parties, in compliance with environmental standards.

If leveling is required, the contractor must first remove the topsoil and put it aside, then return it to the original site once the work has been completed.

When excavation is performed during the winter, snow must first be removed from the work area and the storage sites before excavation begins. Before backfilling, snow shall first be removed from the excavation and the fill material.

3.4.4 Assembly and erection of structures

The wind turbines and collector system must be assembled in such a way as to cause as little disturbance as possible to crops and farming operations. The work area must be kept to a minimum and clearly marked.

All metallic debris must be removed from the site. The proponent shall ensure that no debris remains on the property and shall use a metal detector if necessary.

3.4.5 Conductor unwinding

Special precautions shall be taken to protect persons, animals, crops and vegetation during conductor unwinding.

Where possible, the proponent shall choose areas with the least agricultural value as unwinding areas. The space required must be minimal and it must be clearly marked.

Wires and other metallic debris shall be picked up immediately.

Excavations for conductor anchors or conductor burial must be allowed to dry. Moreover, fill material must be packed and surface topsoil must be restored to a depth of 30 cm at all anchor points.

3.4.6 Site restoration

As soon as possible after construction, the proponent shall take measures to restore disturbed property to its original state.

The land shall first be levelled and ruts filled in to obtain a uniform working surface.

Soil samples shall be taken in various places on farms prior to and after construction to ascertain the level of fertility. Depending on the results, the proponent shall implement one or more of the following measures to promote the quick restoration of crops:

- Work the land using a mould board plow or a chisel plow to the depth desired by the owner (up to 25 cm);
- Loosen the soil to the depth desired by the owner (up to 15 cm), using techniques appropriate to the type of soil (e.g. disc harrow, roto spader, spike-tooth harrow);
- Run a chisel plow over the land to the depth desired by the owner (up to 40 cm);
- Run a subsoiler³ over the land to the desired depth, soil and underground drainage conditions permitting. After two growing seasons, the land must be analyzed to ascertain whether its original productivity has been restored;
- Bury organic matter, manure or chemical fertilizer in order to restore the land's fertility, bearing in mind the recommendations of the Centre de référence en agriculture et agroalimentaire du Québec (CRAAQ) and the owner's crop-rotation practices;
- Remove rocks up to 8 cm in diameter or until conditions are comparable to those of the surrounding land.

3. A caterpillar tractor should be used for this operation. The subsoiler must be equipped with variable-spacing colters adaptable to different types of soil. The colters must be equipped with duck-foot shanks.

All of these operations must be done when the ground is in the best possible condition and they may be repeated.

Depending on the time of year when restoration work is carried out, the land may be re-seeded according to criteria established by the landowner.

The proponent must remove temporary structures and installations, such as fences, bridges and ditches, and restore the land and existing installations to their original state.

On sites where the disturbance of soil due to construction may cause erosion, measures shall be adopted to stabilize the affected areas. Such measures shall rely on one or more of the following methods:

- Retaining embankments;
- Diffusers;
- Furrows or diversion ditches perpendicular to the slope designed to channel runoff into areas covered with vegetation;
- Levelling and banking;
- Gabions, sand bags, grids or mesh;
- Any other measure deemed acceptable by the agricultural specialist;
- Re-seeding;
- Mulch.

Typical explanatory plans with technical specifications shall be provided for the most common cases. The proponent shall have plans drawn up for specific cases.

When the work has been completed, the proponent (or his representative) and the landowner shall visit the land where the work has been performed and the access roads to ensure that all debris has been removed and that the site has been restored to the owner's satisfaction.

3.4.7 Dismantlement

Upon expiration of the surface rights, and unless a specific agreement between the Landowner and Superficiary has been reached, the Superficiary agrees to remove at its own expense the wind turbine facilities and structures that were installed and restore the subsoil to its original condition. The upper layer (one meter) of the concrete bases will be removed and covered with a layer of topsoil. The surface will be restored for farming or reforested as agreed upon with the landowner.

3.5 Conciliation

Should a landowner and the proponent disagree, the dispute may, at the discretion of either party, be submitted to a conciliator.

The parties may agree in advance on a list of persons qualified to act as conciliator. Should a disagreement arise, either party may call upon one of the conciliators named in the list, according to procedures to be agreed upon.

The conciliator is responsible for attempting to find an amicable solution to the dispute submitted to him. His recommendations are not binding on either party. Depending on the conciliator's decision, one of the parties shall assume the cost of the conciliation.

Chapter 4 – Operation and maintenance of the wind farm

4.1 Introduction

During operation and maintenance of the wind farm, land use is maintained except within the boundaries of the right-of-way defined in the Deed of superficies⁴. No fences are installed around the facilities (turbine platform, collector system components, etc.) so that the areas used during construction can be available for farming or reforestation.

The proponent conducts visits, inspections and repairs to ensure the reliability of the wind farm.

This section describes the methods the proponent uses to ensure respect for private property during maintenance and operation of the wind farm.

4.2 Wind farm maintenance

4.2.1 *Maintenance of the overhead collector system*

Collector system overhead-line maintenance encompasses work on support structures, insulators, conductors and accessories. The main activities fall into the following categories:

- Visits and inspections;
- Repairs;
- Major maintenance (such as restoration, renovation and rebuilding).

4.2.2 *Maintenance of wind turbines*

The wind farm is usually controlled and monitored remotely in a semi-automatic fashion through an electronic system. Such a system allows certain wind turbine operating parameters to be modified, the production rate to be set, emergency shutdowns to be made, etc., thus limiting physical access to the site.

Wind turbine maintenance and operation are done in accordance with the program established by the manufacturer. Periodic maintenance includes the lubrication of parts, tightening of bolts, changing of hydraulic filters and oil, and routine tests.

4. A sample Deed of superficies is provided in Appendix A.

4.3 Mitigation measures respecting operation and maintenance

4.3.1 General rules

The following general rules make it possible to mitigate the impact of wind farm maintenance on farms and in woodlands:

- The proponent must obtain the owner's permission before using his property outside the wind turbine or collector system right-of-way for the purpose of wind farm maintenance.
- The proponent must obtain from each owner a list of vulnerable elements on the farm or in the woodland and agree with the landowner on procedures to protect them or at least to attenuate the effects of maintenance measures on them.
- The proponent shall designate resource persons in its regional offices to provide farmers and forestry producers with technical information on wind farm maintenance.
- The proponent alone shall be responsible for the implementation of mitigation measures respecting wind farm maintenance on farms and in woodlands.

During maintenance, the proponent shall apply mitigation measures concerning noise, farm or access roads, fences and gates, surface and underground drainage, traffic, soil compaction, smoke, dust and other pollutants, and site restoration.

However, it is acknowledged that all of the foregoing measures cannot be complied with in an emergency, for example, in the event of outages caused by a storm or a major equipment failure.

Should property be damaged or crops lost as a result of maintenance work, the proponent shall compensate the landowner.

4.3.2 General clauses

4.3.2.1 Noise

During maintenance work, the proponent shall bear in mind the inconvenience caused by noise and make efforts to reduce it. Where noise regulations are in effect, the proponent shall comply with them and, to this end, keep the appropriate files up to date.

In areas where animals that are potentially sensitive to noise are raised (e.g. poultry, rabbits and fur-bearing animals), precautions shall be taken to limit strident or sudden noise, especially that caused by machinery and maintenance vehicles.

Should problems related to noise arise during maintenance work, measures shall be adopted to attenuate its effects.

4.3.2.2 Farm and access roads

The proponent must obtain permission from the landowner involved before using or building an access road. The agreement concluded with the landowner shall indicate conditions governing the use of the access road.

When the use of an access road produces dust that is harmful to individuals or the environment, measures shall be adopted to reduce it.

If farm and access roads are damaged during the course of maintenance and operation work, they must be restored to their original state or better, using materials of the same nature and size as the materials making up the roads. Under normal use, one year (one freeze-thaw cycle) must elapse before the proponent's responsibility for restoring the roads lapses.

Paved roads shall be protected from damage and shall be kept clean at all times.

4.3.2.3 Fences and gates

After reaching an agreement with the landowner, the proponent shall install gates or temporary fences where necessary to protect crops, livestock and property.

Fences running along public access roads must have rigid gates to prohibit unauthorized access to the site outside of maintenance hours.

The proponent may use one of the following procedures as regards electric fences:

- Install an arch;
- Modify the power supply in order to supply the fence from both sides of the gate.

Gates are installed as follows:

- Shore up posts on either side of the opening to maintain mechanical tension in adjacent spans;
- Manually cut the wire and, if it is suitable, use it to build the gate; otherwise, the wire shall be gathered up and replaced with material of equivalent or higher quality to build the gate.

The proponent shall ensure that the contractor responsible for maintenance properly maintains the gates and keeps them closed at all times.

Any fence or gate that is cut, removed, damaged or destroyed shall be immediately repaired or replaced with material of equivalent or higher quality.

When the maintenance work has been completed, temporary gates shall be removed, unless an agreement to the contrary is reached with the owner.

If stone or pole fences have to be dismantled, materials shall be stored and re-used when the fence is restored once the maintenance work has been completed.

The proponent shall maintain adequate protection systems for livestock. Any fence needed to keep out particular kinds of animals shall be described in the specific mitigation measures.

4.3.2.4 Surface drainage

The proponent shall take stock of drainage on land where maintenance work is being done and shall install any bridges, culverts, fords or drainage diversions needed to ensure normal, continuous drainage in ditches, trenches or other channels affected by maintenance work.

The proponent must obtain the landowner's permission before using an existing bridge or culvert and shall properly maintain said bridge or culvert and carry out the necessary repairs.

An agricultural engineer or the proponent's maintenance supervisor must approve any change in surface drainage anticipated for the duration of maintenance work.

Throughout the maintenance work, the proponent must ensure that surface drainage systems are kept in working order and that ditches are kept free from obstructions.

The culverts that the proponent installs must be at least 3.5 m long, installed 10 cm below the bottom of ditches and covered with at least 30 cm of earth. Moreover, they must be wide enough to allow water to flow freely.

When a bridge deck is installed, it must cover the banks sufficiently to ensure their stability.

Once maintenance work is completed, unless an agreement to the contrary is reached with the landowner, the proponent shall remove the temporary bridges and culverts, clean ditches and restore banks to their original state.

Before maintenance work begins, the proponent shall identify wells and sources of drinking water that may be affected and, if need be, establish specific measures to protect them. Water samples shall be taken prior to, during and after major maintenance work to ensure that the quality of water is unaltered. In the event of a decrease in the quality of the water, the proponent shall take the necessary steps to eliminate the cause of contamination.

The proponent must remove all accumulation of sediments in a ditch or waterway resulting from major maintenance work and affecting the normal flow of drainage systems.

4.3.2.5 Underground drainage

Before maintenance work commences, the proponent shall locate underground drainage systems in the work zone, based on indications supplied by the owner.

During major maintenance work, the proponent shall ensure that roads are not built over any drains.

On land with low bearing capacity, areas where drains are crossed by roads shall be protected.

Should drains be punctured during excavation, the proponent must ensure uninterrupted flow in upstream drains and install a plug in the downstream drain to prevent permanent or temporary obstructions. A marker must be left in place until the drain is repaired.

Before the excavation is filled, the proponent shall repair any damaged drains and ensure that the drainage system is operating properly, according to MAPAQ standards governing drains. If ruts are created and there is a risk of the drains collapsing, the landowner may demand that they be verified by excavation.

If a damaged drain must be repaired, the proponent shall notify the landowner so that he can be present during the repair. For extensive repairs, the proponent or the landowner may request that they be done by a specialized contractor. Both parties must approve all work before backfilling.

In the case of a farm with an underground drainage plan yet to be developed that must be altered because of maintenance work, the proponent shall have his designer modify the drainage plan at its expense.

In the spring and fall following the maintenance work, the proponent shall return to the site with the landowner to verify the proper operation of the drainage system affected by the work.

4.3.2.6 Traffic over the land

This measure applies solely to cultivated land.

The location of the access roads is determined on the basis of the least impact on farming operations, and, wherever possible, the roads are located alongside fields with an orientation along lot, concession or any cadastral lines, while avoiding having routes run diagonally across crops.

The road to be used by the contractor over the land must be established in advance by the proponent. These access roads shall, in some cases (e.g. sensitive areas, special arrangements made with the owner), be marked out on the site.

The proponent shall ensure that the access roads do not prevent the landowner or occupant from entering neighboring fields. Ruts shall be levelled if they hinder farm operations.

Depending on the season and the nature of the soil, the proponent shall restrict access by vehicles and machinery that are too heavy to travel on the land without disturbing it.

When maintenance work has been completed, the proponent shall remove the temporary structures and restore the land to its original state, according to the requirements stipulated in Section 4.3.2.2 on farm and access roads.

4.3.2.7 Soil compaction

This measure applies solely to cultivated land.

Under certain unfavorable conditions (such as soaked soil, winter thaws, etc.), major maintenance work may compact the soil to a greater or lesser degree, depending upon stoniness, vegetation and soil type. To minimize damage, the following measures are advocated:

- Schedule maintenance work during seasons when the bearing capacity of the soil is best;
- Except in the case of an emergency, restrict access by certain vehicles or machinery if the soil has insufficient bearing capacity;
- Use only track vehicles or vehicles with extra-wide tires;
- Limit traffic to one lane and keep the number of vehicle trips to a minimum;
- Use a bearing mat or mattress;
- Suspend certain phases of the work when conditions are unsatisfactory;
- Implement any other relevant method recommended by the agricultural specialist.

When maintenance work has been completed, the proponent shall apply as needed the measures provided for in Section 4.3.2.9 with regard to site restoration.

4.3.2.8 Smoke, dust and other pollutants

The proponent shall ensure that the maintenance contractor's equipment operates according to the manufacturer's specifications. Should problems arise when maintenance work is being done, the proponent shall take remedial action such as the application of dust-control products, the installation of filters or the withdrawal of certain equipment.

Equipment must be free of leaking oil, gasoline or other pollutants. Dumping and burying of these products are prohibited. When major maintenance work commences, the proponent shall give the contractor a used oil recovery log and shall check it throughout the project.

In the event that a pollutant is accidentally spilled as a result of a defect or mechanical breakdown, the area affected must be quickly cordoned off and the product flow stopped with an absorbent material. If need be, the affected topsoil shall be removed and replaced with topsoil from an authorized site.

Clean-up, especially at each support structure site, shall be an integral part of each phase of major maintenance. Machinery must be equipped with waste containers.

On farms, no burning or burying of waste from the site shall be permitted. Such refuse must be transported to an authorized dump. In woodlands, waste burning and stump burying may be authorized.

4.3.2.9 Site restoration

As soon as possible after the major maintenance work, the proponent shall take measures to restore disturbed property to its original state.

The land shall first be leveled and ruts filled in to obtain a uniform working surface.

Soil samples shall be taken in various places on farms prior to and after the maintenance work to ascertain the level of fertility. Depending on the results, the proponent shall implement one or more of the following measures to promote the quick restoration of crops:

- Work the land using a mould board plow or a chisel plow to the depth desired by the owner (up to 25 cm);
- Loosen the soil to the depth desired by the owner (up to 15 cm), using techniques appropriate to the type of soil (e.g. disc harrow, roto spader, spike-tooth harrow);
- Run a chisel plow over the land to the depth desired by the owner (up to 40 cm);
- Run a subsoiler⁵ over the land to the desired depth, soil and underground drainage conditions permitting. After two growing seasons, the land must be analyzed to ascertain whether its original productivity has been restored;
- Bury organic matter, manure or chemical fertilizer in order to restore the land's fertility, bearing in mind the recommendations of the Centre de référence en agriculture et agroalimentaire du Québec (CRAAQ) and the owner's crop-rotation practices;
- Remove rocks up to 8 cm in diameter or until conditions are comparable to those of the surrounding land.

All of these operations must be done when the ground is in the best possible condition and they may be repeated.

Depending on the time of year when restoration work is carried out, the land may be re-seeded according to criteria established by the landowner.

The proponent must remove any temporary structures and installations, such as fences, bridges and ditches, and restore the land and existing installations to their original state.

5. A caterpillar tractor should be used for this operation. The subsoiler must be equipped with variable-spacing colters adaptable to different types of soil. The colters must be equipped with duck-foot shanks.

On sites where the disturbance of soil due to construction may cause erosion, measures shall be adopted to stabilize the affected areas. Such measures shall rely on one or more of the following methods:

- Retaining embankments;
- Diffusers;
- Furrows or diversion ditches perpendicular to the slope designed to channel runoff into areas covered with vegetation;
- Leveling and banking;
- Gabions, sand bags, grids or mesh;
- Any other measure deemed acceptable by the agricultural specialist;
- Re-seeding;
- Mulch.

Typical explanatory plans with technical specifications shall be provided for the most common cases. The proponent shall have plans drawn up for specific cases.

When maintenance work has been completed, the proponent's representative and the landowner shall visit the land where the work has been performed and the access roads to ensure that all debris has been removed and that the site has been restored to the owner's satisfaction.

Chapter 5 – Compensation of landowners

5.1 Introduction

This section deals with the financial compensation that the Optionholder or Superficiary shall pay the owners of property needed for the purpose of developing a wind farm project. All of the financial compensation formulas and amounts are for reference purposes to facilitate negotiation.

Such compensation applies to construction, wind farm operation and maintenance, and the dismantling of the wind farm.

The rules governing compensation in respect of farms apply to the territory covered by the *Act respecting the preservation of agricultural land and agricultural activities* and defined as an agricultural zone by Québec government order-in-council.

The rules governing compensation in respect of woodlands apply to the territory covered by the *Act respecting the preservation of agricultural land and agricultural activities* and defined as an agricultural zone by Québec government order-in-council and all private Québec forests used for production.

In exchange for the compensation offered in the option, any landowner who signs an Option agreement⁶ in favor of the Optionholder must allow the Optionholder, as soon as it exercises the option, to access the land in question, install its equipment there and begin the construction and installation of power lines, wind turbines or other power system facility, for the purposes and in the manner stipulated in the Option agreement, as well as sign a Deed of superficies at the Optionholder's first request.

5.2 Total financial compensation (C_g)

The following formula summarizes the elements to be included when compensation is calculated for the Option agreement and Deed of superficies, the damages and the inconvenience related to a wind farm construction project on farms and in woodlands:

$$C_g = C_1 + C_2 + C_3 + C_4 + C_5 + C_6 + C_7 + C_8$$

where:

C_g is the total financial compensation to be paid to the owner;

C₁ is the compensation for signing of the Option agreement;

C₂ is the compensation for the presence of a weather mast;

6. A sample Option agreement is provided in Appendix A.

- C₃ is the compensation for the surface rights title, which includes the required easements;
- C₄ is the compensation for permanent damage outside the right-of-way;
- C₅ is the additional payments (individual and collective);
- C₆ is the compensation for temporary work space⁷;
- C₇ is the compensation for the loss of crops outside the right-of-way and during construction⁷;
- C₈ is the compensation for inconvenience caused by construction work⁷.

5.2.1 Compensation for the signing of the Option agreement (C₁)

The Option agreement is a privately signed legal document through which the landowner cedes to another party (the Optionholder) the irrevocable option to acquire a real, unencumbered, perpetual surface right for the construction and operation of a wind farm on a strip of land that forms the base for the surface right, called “right-of-way.” In exchange, the Optionholder, upon exercising the option, agrees to acquire the surface right for a certain price, which is paid at the time the Deed of superficies is signed.

5.2.1.1 Technical information on land

When, prior to the construction of the wind farm, the Optionholder asks for written permission from the owner to carry out technical and geotechnical work other than surveying or work related to installing a weather mast that requires the use of machinery, vehicles or equipment on the owner’s land, the Optionholder shall pay the owner \$450 in compensation.

5.2.1.2 Signing of the Option agreement

For the agreement involving the granting of an option on farms and in woodlands, the Optionholder pays each landowner the higher of the following two amounts:

- An annual amount of forty cents (\$0.40) per hectare per year of land under the option;
- An annual amount of \$450.

Such compensation is paid within 30 days of signing the Option agreement and at each anniversary date.

The initial term of the Option agreement is determined by the parties and can be renewed once by the Optionholder under the same terms. The total term of the Option agreement cannot exceed five (5) years, unless the Optionholder has an electricity supply contract with Hydro-Québec and an additional term is required under this contract.

7. Applies to construction, rehabilitation, renovation, reconstruction and dismantlement projects.

5.2.2 Compensation for the presence of a weather mast (C₂)

As soon as the Option agreement has been signed and before a wind farm is built, the Optionholder can install one or more weather masts on the property covered by the Option agreement.

The initial compensation payment shall be made prior to the start of construction of the weather mast. Any subsequent annual payments shall be made on the anniversary date of the initial payment.

The above annual compensation shall no longer be paid to the owner when one of the following events occurs:

- The weather mast has been dismantled;
- The Optionholder exercises the option; in such a case, any weather masts must be contained within the right-of-way defined in the Deed of superficies.

5.2.2.1 On farms

On cultivated land, encumbrance resulting from the weather mast is compensated by taking into account the arable land surface lost, the additional cost of driving around it and the cost of maintaining the uncultivated space.

Compensation is 20% per year of the amount obtained, i.e.:

$$C_{MA} = S_M \times V_M \times 20\%$$

where:

C_{MA} is the annual compensation for the presence of a weather mast;

S_M is the surface area (in hectares) of the quadrangle formed by the weather mast attachment points on the ground;

V_M is the market value of the farmland per hectare.

5.2.2.2 In woodlands

The owner of a woodland shall receive, as annual compensation for the presence of a weather mast, 20% of \$150 per support point and anchor point, up to a maximum of \$150 per weather mast per year.

In addition, the woodland owner shall be compensated for 100% of the value of felled standing trees.

5.2.3 Compensation for surface rights (C₃)

The Optionholder, at the time the option is exercised, agrees to acquire surface rights for a certain price, which is paid at the time the Deed of superficies is signed.

All wind farm facilities must be located within the surface area (right of way) covered by the surface rights unless a competent authority establishes that the use of land taken by certain components of the facilities must be by way of right of way. In that case, for the purposes of the application of the terms of reference, and particularly for the purposes of this section, a surface right and a right of way shall be treated the same way. The term “wind farm facilities” shall include the following: wind turbines, Electric Power Collection System Facilities, power storage facilities, telecommunications equipment, power generation facilities to be operated jointly with large-scale wind farms, roads, weather observation towers and wind measurement equipment, control buildings, maintenance work sites, parking lots and related facilities and equipment.

5.2.3.1 On farms

Compensation paid for any farmland covered by the surface rights title shall be established as follows:

$$C_{DS} = (S_O \times R_A) + V_{CA}$$

where:

C_{DS} is the compensation for the surface rights (paid as a single payment);

S_O is the surface area covered by the surface rights (right-of-way);

R_A is the present value of the rent for the property per hectare;

V_{CA} is the present value of the loss of crops on the surface area covered by the surface rights, as determined by a specialist for the duration of the surface rights.

The present value of the rent is calculated using the following formula:

$$R_A = [1 - (1 + T)^{-D}] \times (V_M \times 1.5)$$

where:

D is the term of the surface rights;

V_M is the market value of the farmland per hectare;

T is the discount rate of 3.5%.⁸

⁸ Rated based on the *Agreement on the Siting of Power Transmission Lines on Farms and Woodlands*.

The present value of the loss of crops is calculated using the following formula :

$$V_{CA} = V_C \times \{ [1 - (1 + T)^{-D}] / T \}$$

where:

V_C is the annual value of the loss of crops on the surface area covered by the surface rights, as determined by a specialist;

D is the term of the surface rights;

T is the discount rate of 3.5%.⁸

At the owner's option, the compensation may be paid as a single payment payable upon signature of the Deed of superficies (V_{CA}) or as an annual payment calculated using the V_{CA} value, the 3.5% rate and the term of the surface rights as the redemption period. In this latter case, the annual payment is revised at the end of each 5-year period, taking into account changes in crops, if need be.

The annual payment option may be converted into a single payment calculated for the remaining duration of the surface rights at the end of any 5-year period or when the Deed of superficies is assigned.

5.2.3.2 In woodlands

Compensation for the surface rights in a private forest used for production is based on the value of the woodlands affected, according to generally accepted methods and principles in forestry assessment.

The main criteria in woodlands are:

- The specific composition, distribution, development and volume of wood in the forest;
- The local and regional value of forest products in relation to requirements respecting dimension and quality and the use to which the products are put. Tables or lists of the prices used for each region of Québec are published annually (in early July) in the joint plans approved by the *Régie des marchés agricoles*;
- The value of standing timber; for instance, the value of the standing timber can be estimated at 50% of the roadside price (“au chemin de camion”).

The compensation paid to the owner of any woodland subject to an easement is made up of the following components.

Forest inventory

Compensation in respect of the forest inventory subject to surface rights is established as follows:

$$C_{DS} = S_O \times R_A$$

where:

C_{DS} is the compensation for the surface rights;

S_O is the surface area covered by the surface rights;

R_A is the present value of the rent of the property per hectare.

Rent is calculated as follows:

$$R_A = [1 - (1 + T)^{-D}] \times (V_m \times 1.5)$$

where:

D is the term of the surface rights;

V_M is the market value of the farmland per hectare;

T is the discount rate of 3.5%.⁸

Standing timber

Compensation in respect of standing timber is based on the volume inventoried during the forest inventory.

To this end, timber stands are first identified, then the volume of merchantable timber is assessed, based on the “continuous strip” method or any other recognized method.

In the case of tree plantings, compensation is established using the Bolghari and Bertrand yield tables.

Future harvest (sugar bushes)

The value of operational sugar bushes is established according to recognized techniques, based on a minimal tapping diameter of 20 cm. The income approach shall be used to establish the value at the tap by calculating the discounted net income based on a perpetual annual loss and a discount rate of 3.5%. Net income is established according to the following values:

- The average annual maple syrup harvest over the past five years;
- The average adjusted price over the past five years;
- Gross income;
- The variable operating expenses recognized by the Centre de références en agriculture et agroalimentaire du Québec (CRAAQ) and specific to sugar bush.⁹

In the case of sugar bushes that are not harvested, compensation is established using the income approach and data recognized by CRAAQ. Sugar bushes that are designated as not harvested must offer a tapping potential of at least 150 taps per hectare at the time of the assessment. The calculation of net income relies on the same procedures as in the case of operational sugar bushes, with the exception of fixed expenses, which are included in the net income of sugar bushes that are not harvested.

Compensation for potential sugar bushes is established using the income approach and data recognized by CRAAQ. To be designated “potential sugar bushes”, they must be undergoing regeneration and have a density of 150 maple trees per hectare. Net income in perpetuity is considered, which is discounted to take into account the number of years that remain until a diameter of 20 cm is achieved. The calculation of net income relies on the same values as in the case of sugar bushes that are not harvested.

For all types of sugar bushes, the value at the tap is based on the status of the sugar bush as a whole.

9. Fixed expenses such as overhead and amortization are not used to calculate net income.

Damage along the right-of-way

The Superficiary shall pay compensation equivalent to 100% of the value of the timber, based on a 5-m strip on either side of the right-of-way, for damage along the right-of way. In the case of a sugar bush, the compensation shall be equivalent to 100% of the value of the output derived from a 12.5-m strip on either side of the right-of-way. Such compensation entitles the Superficiary to cut all trees within the strip that may hinder the operation of the wind farm, without additional compensation.

If, because of the implementation of equipment and facilities required for the operation of the wind farm, the landowner sustains damage along the right-of-way that exceeds the value of the compensation stipulated in the preceding paragraph, the Superficiary shall assess such damage and grant compensation for the excess damage.

5.2.4 Compensation for permanent damage outside the right-of-way (C₄)

On cultivated land, permanent damage caused to the crops outside the right-of-way by the facilities and equipment required for the operation of a wind farm is compensated by the Superficiary.

Upon signature of the Option agreement, the owner must choose between the two following compensation formulas: a streamlined method (Formula A) or an evaluation, done by a specialist, of the actual cost of the damage incurred (Formula B):

Formula A:
$$C_{DP} = V_M \times S_T$$

where:

C_{DP} is the compensation for permanent damage outside the right-of-way;

V_M is the market value of the farmland per hectare;

S_T is the total surface area (in hectares) of the right-of-way (minimum surface area of 1 ha).

The applicable compensation based on Formula A shall be made in a single payment upon signature of the Deed of superficies.

Formula B:

Compensation takes into account the arable land surface lost outside the right-of-way, the additional cost of driving around them and the cost of maintaining the uncultivated space.

The applicable compensation based on Formula B can be paid in two ways:

- In the form of a single payment, calculated using a discount rate of 3.5%, for the term of the surface rights, payable when the Deed of superficies is signed;
- In the form of an annual payment.

If the parties agree on an annual payment, the amount of the payment is subject to review every five years, bearing in mind the choice of crops. The annual-payment option may be converted into a single payment at the end of any five-year period or when the ownership of the property is transferred.

5.2.5 Additional payments (C₅)

5.2.5.1 Annual payments related to the presence of wind turbines on the land

If any wind turbines are built in the right-of-way, the Superficiary shall pay, for the term of the surface rights, an annual amount that is determined, at the landowner's choice, using either of the following two (2) methods:

- A set amount of \$2,500.00 per installed megawatt (this amount must be indexed at a level that is at least equal to the indexation rate of the price of electricity in the electricity supply contract);
- A percentage of the gross revenue that the Superficiary earns from the sale of electricity generated by each wind turbine in the right-of-way, with the result not being less than the amount in the paragraph above.

5.2.5.2 Annual collective payments

A landowner whose option has not been exercised is entitled to an annual collective payment in the same manner as the owner whose option was exercised.

When the wind turbines in the project area begin to generate electricity revenues, the Superficiary shall pay, for the term of the Deed of superficies, an annual payment established as follows:

$$C_C = (S_P \div S_{TP}) \times R_B \times 0.5 \%$$

where:

C_C is the collective payment;

S_P is the surface area of the property involved in the Option agreement;

S_{TP} is the total surface area of the properties involved in the wind farm Option agreements;

R_B is the annual gross revenue that the Optionholder or Superficiary obtains from the sale of electricity generated by the wind farm.

In consideration for the collective annual payment, the landowner whose option has not been exercised agrees to not hinder the speed or direction of the winds on the surface of the property by placing wind turbines or other structures that could decrease the output or efficiency of the proponent's wind farm facilities.

5.2.6 Compensation for temporary work space (C₆)

This compensation is for the temporary use of a portion of land located outside the right-of-way, excluding access roads, for the purpose of storing material or carrying out work related to wind farm construction.

During the first year the temporary work space is used, the compensation paid is equivalent to 50% of the market value of the target farmland (Vm), without any minimum usage time. On forest land, the market value is that of the stripped forest land value (at 50%) and the landowner receives the value of the standing timber actually cut. After one year, the compensation in both cases is equivalent to 5% per month of the market value (Vm). The total compensation may not be less than \$500.

Compensation for direct damage is paid in addition to the compensation for temporary work space, in accordance with the rules applicable for elements C₇ and C₈.

5.2.7 Compensation for crop losses outside the right-of-way and during construction (C₇)

Compensation for crop losses is calculated by multiplying the quantity lost by the local or regional market price for each crop. In the absence of a local or regional market, the prices and rates of yield established by the Financière agricole du Québec shall prevail. A minimum of \$75 in compensation shall be paid.

Where crop losses caused by construction work occur in years subsequent to the one in which the wind farm was commissioned, a representative of the Superficiary shall assess losses and pay compensation calculated on the same general basis. Should crop losses persist despite resources and reasonable attempts by the landowner to rectify the situation, the Superficiary shall identify the cause in collaboration with the landowner and endeavor to find a permanent solution and restore the land's original productivity as quickly as possible.

In the case of crop losses pertaining to organic products, the compensation must also take into account the anticipated delay before cultivation resumes, in accordance with provisions in the applicable certification program.

5.2.8 Compensation for inconvenience caused by construction (C₈)

Compensation for inconvenience caused by construction covers losses, accidental damage and other inconveniences sustained by the landowner inside or outside the right-of-way as a result of work carried out by the Superficiary or contractors for purposes of wind farm construction.

It covers, for example, the need to run livestock across the right-of-way during construction, the nuisance or damage caused to pastures adjacent to the site, the loss of shade trees, and damage caused to fences, logging roads, buildings and other installations.

Compensation in respect of woodlands is calculated in the same manner as for element C₄.

5.3 Other compensation

5.3.1 Compensation pertaining to a forest management plan

If woodland subject to an easement or space occupied by the weather mast is included in a simple or joint forest management plan, the Optionholder or Superficiary shall take into account any steps taken by the landowner, investments made in connection with the forest management plan, the work completed, additional yield potential, possible financing penalties, and progress made in the implementation of the management plan.

5.3.2 Interest

The Optionholder or Superficiary shall pay interest on any amount owed to a landowner at the rate determined under Section 28 of the *Act respecting the ministère du Revenu* for amounts owed to the government.

Interest accrues starting from the time the amount owed is payable.

5.3.3 Work carried out by the owner

The Optionholder or Superficiary may ask the landowner to perform such work as initial clearing, mechanical vegetation control, and site restoration. The remuneration accorded the owner is equivalent to the average price that the holder or superficiary pays for such work.

Appendix A
Contract Forms

Appendix A1
Option Agreement

OPTION AGREEMENT made in _____ , Province of Québec, on _____ .

BETWEEN:

(the "**Optionholder**")

AND:

(the "**Owner**")

THE PARTIES AGREE AS FOLLOWS:

1. DEFINITION OF PROJECT

(definition) (hereinafter referred to as the "**Project**")

2. OPTION TO ACQUIRE A RIGHT OF SUPERFICIES

The Owner hereby exclusively grants the Optionholder an irrevocable option to acquire a right of superficies on part of the property described hereinafter, for the price and upon the conditions set forth hereinafter (hereinafter referred to as the "**Option**").

CADASTRAL DESCRIPTION OF PROPERTY

One or more parcel(s) of land, having an area to be determined at the time of the surveying operations to be carried out upon the exercise of the Option, at the Optionholder's expense, forming part of the immovable property described as follows:

(description)

(all of which property is referred to hereinafter as the "Property").

3. DURATION OF EXCLUSIVE OPTION

Subject to the renewal specified hereinafter, the Option is granted solely for the benefit of the Optionholder for a period of _____ (___) months commencing on the date of execution of this Option Agreement and terminating automatically on _____ at 6:00 o'clock P.M. (hereinafter referred to as the "**Expiry date of the Option**").

The said exclusive Option shall be automatically renewed upon the same conditions for an additional period of _____ (___) months, unless the Optionholder sends the Owner a notice in compliance with section 4 at least thirty (30) days prior to the Expiry date of the Option .

However, the total duration of the Option, including the renewal, may not exceed sixty (60) months (5 years) unless the Optionholder is the signatory of an electricity supply contract with Hydro-Québec requiring such duration to extend for a longer period of time.

If the Optionholder does not exercise the Option within the specified time, the Option shall become null and void.

In the event the option is not exclusive, sections 2, 3 and 12 of this Option Agreement will be amended accordingly.

4. EXERCISE OF OPTION BY THE OPTIONHOLDER

If the Optionholder exercises the Option, the Optionholder must sign in the space provided hereafter and hand deliver the original of this Option Agreement to the Owner or send same to the Owner by registered mail at the Owner's residential address appearing hereinafter:

(Owner's address)

5. DEED OF SUPERFICIES

Subject to compliance with the conditions and undertakings set forth in this Option Agreement, the parties agree to execute a deed of superficies (hereinafter referred to as the "**Deed of Superficies**") in the form attached to this Option Agreement, within sixty (60) days following the date as of which the Option is exercised (hereinafter referred to as the "**Closing Date**"), before a notary of the Optionholder's choice.

Each of the parties undertakes and agrees to pay the fees and disbursements of any legal counsel engaged by the party concerned with respect to the negotiation and execution of the documents to be signed in connection with the transaction contemplated in this Option Agreement.

6. TITLE

At any time up to the Closing Date, the Optionholder may make or have made by a notary of the Optionholder's choice an examination of the title to the Property. If such title examination should reveal that the Owner's title to the Property is not consistent with the representations and warranties made or given by the Owner in this Option Agreement or if the documents evidencing title should indicate any irregularities or defects that are not acceptable to the Optionholder, acting reasonably, then the Optionholder may, at any time up to the Closing Date, cancel the exercise of the Option, by ordinary notice in writing sent to the Owner by certified mail, whereupon all of the obligations of the parties to this Option Agreement shall be extinguished and neither party shall have any remedy against the other.

7. REPRESENTATIONS AND WARRANTIES

The Owner hereby warrants and represents to the Optionholder:

- 7.1 that he/she is the sole and absolute owner of the Property with good and valid title thereto, free and clear of all leases, powers of attorney, mining, petroleum or gas rights, servitudes or other charges or encumbrances other than those that have been duly published;
- 7.2 that he/she is a resident of Canada for purposes of Canadian tax legislation, or if not a resident of Canada, that he/she is in good standing under the provisions of Canadian tax legislation applicable to him/her;
- 7.3 that the physical condition, occupancy and use of the Property are in compliance with applicable laws and regulations, including in particular by-laws and regulations relating to zoning and urban planning;
- 7.4 that his/her current civil status is _____.

8. PHYSICAL INSPECTION OF THE PROPERTY

At any time up to the Closing Date, the Optionholder and any other person that the Optionholder may designate, including its agents, representatives or advisers, shall be entitled to make a physical inspection of the Property.

The Owner agrees to allow the Optionholder and the Optionholder's agents, representatives and advisers free access to the Property for the purpose of making such an inspection.

When accessing the Property, the Optionholder shall act in a responsible manner, in accordance with the principles set forth in the *Terms of Reference for the Siting of Wind Farms on Farmlands and in Woodlands* (hereinafter referred to as the "Terms of Reference"), of which the Optionholder acknowledges receiving a copy; accordingly, the Optionholder agrees to bear the costs relating to any damage that may be caused to the Property and, as the case may be, to pay the compensation stipulated in the Terms of Reference.

9. INSTALLATION OF WIND MONITORING EQUIPMENT

From and after the execution of this Option Agreement and before a wind farm is built, the Optionholder may install, one or more weather mast(s) on the Property covered by the Option Agreement for the purpose, *inter alia*, of allowing wind measurement readings to be taken. The duration of time for which wind monitoring equipment may be present on the Property may not exceed 60 months (5 years), unless the Optionholder is the signatory of an electricity supply contract with Hydro-Québec requiring such duration to extend for a longer period of time.

Each weather mast shall be installed in accordance with the provisions contained in the Terms of Reference and shall be subject to compensation payable by the Optionholder to the Owner as defined in the Terms of Reference. The initial compensation payment shall be made prior to the start of installation of the weather mast. Subsequent annual payments, if any, shall be made on the anniversary date of the initial payment.

The said annual compensation shall cease being paid to the Owner when:

1) the weather mast has been dismantled;

or

2) the Optionholder exercises the Option.

In the event the Option is exercised, any weather mast will have to be located within the Right-of-Way as defined in the Deed of Superficies.

10. COMPENSATION FOR SIGNING THE OPTION AGREEMENT

Whether or not the Optionholder exercises the Option, the Optionholder shall pay the Owner compensation for signing the Option Agreement set out in the Terms of Reference. Such compensation shall be paid within thirty (30) days following the date of execution of the Option Agreement and thereafter on each anniversary date of the execution of the Option Agreement.

In addition to the aforesaid payment, if this Option is renewed pursuant to the provisions of section 3, the Optionholder shall pay the Owner an amount equal to the greater of: (i) an annual amount of _____ (\$____) per hectare of land comprised in the Property covered by the Option; or (ii) an annual amount of _____ (\$____), no later than thirty (30) days following the Expiry date of the Option and thereafter on each anniversary date of such date.

11. COMPENSATIONS AND PAYMENTS IN RESPECT OF THE EXERCISE OF THE RIGHT OF SUPERFICIES

Upon execution of the Deed of Superficies, the Optionholder shall pay the compensations and make the annual individual payments to the Owner set out in the Terms of Reference. In addition, and depending on the events that may occur, the Optionholder further undertakes to pay the Owner the compensations applicable to construction, rebuilding, renovation and other similar work in accordance with the terms and conditions set out in the Terms of Reference.

12. ANNUAL COLLECTIVE PAYMENT AND OWNER'S UNDERTAKING

If the Option is not exercised and no wind farm facilities are constructed on the Property, the Optionholder, shall nevertheless, in the event any wind turbines erected as part of the Project begin to produce and generate revenues from the sale of electricity, pay the Owner an amount on account of the annual collective payment as defined in the Terms of Reference. The annual collective payment shall be shared

with all of the optionors who have granted options in connection with the Project, in the proportion that the area of the Property bears to the total area of the properties for which Option Agreements have been signed in connection with the Project.

In consideration of such collective payment, the Owner agrees not to install any wind turbines or other structures that would interfere with the velocity or direction of the winds blowing over the Property and could thus decrease the output or efficiency of the wind farm facilities.

13. CONDITIONS

If one or more of the conditions specified in this Option Agreement are not met by the Owner before the Closing Date, or if one or more of the Owner's representations and warranties set forth in this Option Agreement are not satisfactory to the Optionholder, acting reasonably, or if any such representation or warranty is, or has by the Closing Date become, untrue or inaccurate, then the Optionholder may terminate the Option Agreement and cancel the exercise of the Option, by ordinary notice in writing sent to the Owner by registered mail, without any further formality being required, and neither party shall have any remedy against the other.

14. ASSIGNMENT BY THE OPTIONHOLDER

It is hereby understood and agreed between the parties that the Optionholder is and shall be entitled, at any time, to assign, without the Owner's consent, all of the rights in the Option granted to the Optionholder in this Option Agreement, in whole or in part, to one or more assignee of the Optionholder's choice, by ordinary notice in writing sent to the Owner by registered mail. Any assignee shall also be entitled, at any time, to transfer all of its rights in the Option back to the original Optionholder, by ordinary notice in writing sent to the Owner by registered mail. An Optionholder (or assignee) shall also be entitled to exercise the Option in connection with any other wind farm project contemplated by such Optionholder (or assignee).

In any of the aforementioned events, all of the Optionholder's rights and obligations shall vest in the assignee and the assignee shall be entitled to exercise the Option in the Optionholder's place and stead.

15. UNDERTAKING TO EXECUTE THE DEED OF SUPERFICIES

The Option contains the entire agreement negotiated and agreed to between the Owner and the Optionholder.

The parties declare that they have carefully reviewed the draft Deed of Superficies, that they understand all the legal and financial implications thereof and that they have received all the legal advice and explanations required by them in order to comprehend the said documents.

Accordingly, the parties irrevocably covenant and agree, in the event the Option is exercised by the Optionholder, that they will execute the Deed of Superficies before a notary, in notarial form, to be prepared in accordance with the specimen attached to this Option Agreement.

Without limiting the generality of the foregoing, the parties declare that this Option Agreement, when signed, shall constitute a full, complete and definitive agreement between them and that each and every one of the clauses, conditions and obligations appearing in the Deed of Superficies a specimen of which is attached hereto shall appear in the final deed executed before a notary.

As a consequence of the aforesaid declarations, the parties understand that each and every one of the clauses and conditions appearing in the Deed of Superficies may not be amended except by mutual agreement of the parties.

16. DISPOSAL OF THE PROPERTY

In the event of a sale of all or part of the Property, the Owner shall advise any prospective purchaser of the existence of the Option, and the Owner undertakes to cause the existence of the Option to be mentioned in any deed disposing of the Property or any part thereof that may be signed by the Owner and also to obtain from any prospective purchaser an undertaking by such purchaser to comply with all of the obligations stipulated in this Option Agreement in the Optionholder's favour, in their entirety, such that the rights herein conferred on the Optionholder are in no way jeopardized or impaired.

17. QUÉBEC LAW

The Option shall be governed by the laws applicable in the Province of Québec.

18. SUCCESSORS AND ASSIGNS

This Option Agreement shall enure to the benefit of and be binding on the parties and their respective successors and assigns, solidarily.

19. INTERPRETATION

Section headings have been inserted for ease of reference only and shall not have any bearing on the interpretation of the Option.

20. SUBSEQUENT AMENDMENTS

Any amendment to a provision of this Option Agreement must be evidenced by written instrument signed by the parties concerned.

21. OWNER'S SPECIFIC REQUIREMENTS

The Owner declares that he/she has certain special requirements for signing this Option Agreement and the parties agree that the Deed of Superficies shall include the following clause(s), namely:

22. CONSENT BY OWNER'S SPOUSE

_____, spouse of the Owner, intervenes in this Option Agreement and declares and confirms that his/her matrimonial status in respect of the Owner is correctly described herein, and after reading this Option Agreement, consents and agrees to all of its terms and conditions, without reservation or qualification.

23. LANGUAGE

The parties hereto declare that they have requested that this Option Agreement and the appendices hereto be drawn up in English./Les parties aux présentes déclarent qu'elles ont exigé que cet Octroi d'option et ses annexes soient rédigés en anglais.

MADE IN _____ , on the ____ day of _____, 20_ .

Optionholder:	Date:

By: _____	
Authorized Representative	

Owner:	Date:
_____	_____
Signature of Owner	

Signature of Owner's spouse	

Option Exercised by Optionholder:	Date:

By: _____	
Authorized Representative	

Appendix A2

Deed of Superficies

**DEED OF SUPERFICIES
(C.C.Q., ss. 1110 and following)**

On _____, **IN THE YEAR TWO THOUSAND AND** _____

BEFORE _____, notary practising in _____

THERE APPEARED:

(hereinafter referred to as the "**Owner**")

AND:

_____, (*description of company*), having its head office at _____, herein acting and represented by _____, duly authorized for the purposes hereof as he/she so declares, the whole pursuant to a resolution of the board of directors passed on _____, a certified copy of which resolution, having been signed for identification and acknowledged as authentic by the representative, in the presence of the undersigned notary, is attached to the minute of this deed

(hereinafter referred to as the "**Superficiary**").

The Owner and the Superficiary hereby agree to create and establish a right of superficies (hereinafter referred to as the "**Right of Superficies**") that is subject to the following terms, conditions and obligations, namely:

OWNERSHIP OF LAND

1. The Owner declares that he/she is the absolute owner of the immovable property described as follows:

DESCRIPTION OF PROPERTY

(*description*)

(hereinafter referred to as the "**Property**")

CREATION OF THE RIGHT OF SUPERFICIES

2. The Owner hereby agrees to establish a Right of Superficies on or under the parcel(s) of land located on the Property more specifically described as follows, namely:

(*description of the parcel(s) of land to which the Right of Superficies applies*)

(hereinafter referred to as the "**Right-of-Way**")

EXCLUSIVE RIGHT TO CONSTRUCT FACILITIES

3. **Right to build.** The Owner grants the Superficiary the exclusive right to construct, erect or install on, above, under, along or across the Right-of-Way the following facilities (hereinafter referred to collectively as the “**Wind Farm Facilities**”): wind turbines, Electric Power Collection System Facilities, power storage facilities, telecommunications equipment, power generation facilities to be operated jointly with large-scale wind farms, roads, weather observation towers and wind measurement equipment, control buildings, maintenance work sites, parking lots and related facilities and equipment.

4. **Definition of Project.**

(description of Project in accordance with the wording contained in the Option Agreement)

(hereinafter referred to as the “**Project**”)

5. **Electric Power Collection System Facilities.** For purposes of this deed, “**Electric Power Collection System Facilities**” means and includes:

- one or more tower lines together with the transmission lines and cables suspended therefrom or the underground transmission lines and cables forming part of a system for collecting electric power or for communication, as well as the foundations, footings, transverse supports and other equipment and installations necessary to provide appropriate supporting structures for such tower lines, wires and cables;
- one or more converter station(s) or switching facilities from which the power generated by wind turbines can be delivered to the electricity transmission system of Hydro-Québec or of another purchaser of electric power.

6. **Term of the Right of Superficies.** The Owner waives in favour of the Superficiary, hereto present and accepting, the benefit of accession in respect of all Wind Farm Facilities to be constructed, erected or installed on, above, under, along or across the Right-of-Way.

The Right of Superficies is established for a term of _____ (__) years from the execution of this deed.

Upon the expiry of the said term, the Superficiary may call for the Owner to renew the superficies for an additional term of _____ (__) years, for a consideration to be determined by the parties at that time.

At the termination of the Right of Superficies, and notwithstanding the provisions of articles 1116 and 1117 of the *Civil Code of Québec*, the Superficiary waives the right to acquire ownership of the subsoil. In addition, and unless a special agreement is entered into between the Owner and the Superficiary, the Superficiary shall remove, at the Superficiary's expense, the Wind Farm Facilities, constructions, works and plantations made by the Superficiary and return the subsoil to its original condition.

RIGHT OF SUPERFICIES

7. **Ownership of facilities.** By reason of the waiver by the Owner of the benefit of accession, as referred to hereinabove, the parties acknowledge that the Superficiary is the sole and absolute owner of the Wind Farm Facilities that may be constructed, erected or installed by the Superficiary on, above, under, along or across the Right-of-Way pursuant to this deed.
8. **Right to remove.** The Owner further acknowledges that he/she has no right of ownership or other right whatsoever in the Wind Farm Facilities constructed, erected or installed on, above, under, along or across the Right-of-Way and that the Superficiary may, in its sole discretion during the term of the Right of Superficies, remove all or part of the Wind Farm Facilities at any time, on condition that it repair any damage caused to the Property by their removal.

SERVITUDES (C.C.Q., art. 1111)

9. **Necessary servitudes.** In accordance with article 1111 of the *Civil Code of Québec*, the Owner hereby creates, on the immovable property described in section 1 and referred to as the Property (the said property constituting the “Servient Land”), in favour of the immovable property described in section 2 and referred to as the Right-of-Way and in favour of the Wind Farm Facilities described in sections 3 and 5 (the said property constituting, collectively, the “Dominant Land”), the present and future servitudes of access and all the other servitudes necessary in connection with the Superficiary’s enterprise, such that the Superficiary may exercise, without limitation, its Right of Superficies created under this deed in respect of the Wind Farm Facilities. Such servitudes of access shall include the right to improve existing roads and accessways.

The servitudes hereby created shall not have the effect of limiting in any manner the Owner’s other rights of ownership, whether in respect of the construction of buildings or otherwise.

10. **Public utilities.** In connection with the exercise of its rights, the Superficiary, acting reasonably, may in its sole discretion grant any public utility or other similar firm or enterprise the right to construct, operate and maintain any electricity transmission, interconnection and/or switching facilities on the Property and on the Right-of-Way, by way of such customary deed of servitude or other agreement as may be used or proposed by such firm or enterprise. The Owner hereby agrees to sign the documents required for this purpose.

USE

11. **Development activities.** The Superficiary may use the Right of Superficies hereby granted to it by the Owner for purposes of the conversion of wind power, the collection and transmission of electric power and any related activities (hereinafter referred to as the “**Development Activities**”), including in particular:
 - (a) determining the possibilities for converting wind power on the Property, in particular by studying wind velocity, wind direction and other meteorological data, and by extracting soil samples;
 - (b) constructing, installing, using, replacing, relocating, removing, maintaining and operating the Wind Farm Facilities on, above, under, along or across the Right-of-Way;
 - (c) pursuing such other activities, whether performed by the Superficiary or a third party authorized by the Superficiary, as the Superficiary considers reasonably necessary, desirable or advisable in order to carry out the aforementioned activities.
 - (d) The Superficiary shall have the exclusive right to convert all of the Property’s wind resources.
12. **Use of Property.** Subject to the rights granted to the Superficiary hereunder, the Owner expressly reserves the right to use the Property for his/her own purposes, including farming and forestry.
13. **Electric Power Collection System Facilities.** In the event of termination of the Right of Superficies in accordance with the provisions of this deed, if the Superficiary wishes to retain its Right of Superficies in respect of the installation and maintenance of the Electric Power Collection System Facilities only, the Superficiary shall pay the Owner an amount equal to the fair market value or the fair rental value of the Right-of-Way, at the Superficiary’s option. Such fair market value or fair rental value shall correspond to the amount agreed upon by the Owner and the Superficiary, or if the parties are unable to agree, to the amount determined by an impartial real estate appraiser, chosen by mutual agreement of the parties, who has experience in real estate transactions in the Province of Québec and is a member of a recognized professional order. The fair market value or fair rental value shall be established on the basis of the commercial value or rental value of the part of the Property concerned having regard for the use thereof, and the said amount shall be payable within thirty (30) days following the date as of which the parties agree on the fair market value or fair rental value (or as of which the appraiser determines such value) (and in the case of the fair rental value, annually thereafter for so long as the Electric Power Collection System Facilities remain on the Property). If the parties are unable to agree on an appraiser, then a judge of the Superior Court for the district in which the Property is located shall choose an appraiser who meets the aforementioned criteria.

PAYMENTS

14. **Payments.** Upon execution of the Deed of Superficies and thereafter, the Superficiary shall pay the following amounts to the Owner:

(summary of all applicable payments and other compensation)

TAXES

15. **Property taxes.** All property taxes attributable to the Wind Farm Facilities shall be borne by the Superficiary.

Any increase in the property taxes assessed against the Property that is attributable to the installation of Wind Farm Facilities on the Right-of-Way shall be borne by the Superficiary.

All other property taxes, surtaxes and other taxes and payments relating to the Property shall be borne by the Owner.

In addition, the Superfiary shall send to the property valuation department of the municipality concerned all the documentation required for the updating of the valuation rolles.

REPRESENTATIONS AND OBLIGATIONS OF THE OWNER

16. The Owner hereby gives and makes the following representations and warranties and undertakes to perform the following obligations:

(a) **Owner's authority.** The Owner hereunder is the sole and absolute owner of the Property and has the unrestricted right and power required to execute this deed and to grant the Right of Superficies and all the necessary servitudes referred to herein to the Superficiary. Any person signing this deed on the Owner's behalf has the authority to do so and all persons having a right of ownership in the Property (including spouses) are signing this deed as owners.

(b) **Taxes.** All general, special, municipal and school taxes affecting the Property have been paid to date without subrogation and all real estate transfer taxes and duties have been paid.

(c) **No impediment.** The Owner's activities and any right granted to any person or entity by the Owner permitting such person or entity to do anything on the Property or elsewhere shall not impede or interfere with:

(i) the construction, installation, maintenance, upkeep, operation or replacement of the Wind Farm Facilities on the Right-of-Way;

- (ii) access to the Wind Farm Facilities;
- (iii) the Development Activities;
- (iv) any other activity authorized under this deed.

Without limiting the generality of the foregoing, the Owner shall not install any wind turbines or other structures that would interfere with the velocity or direction of the winds blowing over the Property and could thus decrease the output or efficiency of the Wind Farm Facilities. The Owner reserves the right to erect buildings on the Property but must obtain prior written consent concerning their location from the Superficiary, which shall act reasonably in regard to such consent.

- (d) **Encumbrances and lessees.** The Owner has good and valid title to the Property, free and clear of all prior claims, charges, hypothecs, servitudes, leases, powers of attorney, mining, petroleum or gas rights and any other security interests affecting the Property (referred to collectively as “Encumbrances and Prior Claims”) other than those that have been duly published.
- (e) **Residence.** The Owner is not a non-resident of Canada within the meaning of the *Income Tax Act* (Canada) and the *Taxation Act* (Québec). The Owner makes this solemn declaration believing it to be true and knowing that it is of the same force and effect as if made under oath in accordance with the *Canada Evidence Act*.
- (f) **Agricultural property.** The Property is not subject to an order-in-council designating it as part of an agricultural zone, being located within a zone known as a white zone, which is not subject to the provisions of the *Act respecting the preservation of agricultural land and agricultural activities* (Québec).

OR

Authorization of the CPTAQ. The Property, although it is located within an agricultural zone, is the subject of a decision by the *Commission de protection du territoire agricole du Québec*, rendered on _____, in file number _____, whereby the Commission authorized the installation, maintenance and use of wind turbines, the construction and use of a substation, the construction and use of an access road to such works and the construction and use of corridors to be used for running overhead or underground electrical transmission lines and equipment [**complete if necessary**], the whole in accordance with the Project, including this deed, submitted to the said Commission by the Superficiary.

- (g) **Good standing.** To the Owner’s knowledge, the Owner declares that the property does not contravene any law, order, regulation or by-law originating with any federal, provincial, municipal or other governmental or regulatory

authority or agency such as could impede or interfere with the Superficiary's activities.

- (h) **Requirements of government agencies.** The Owner shall fully cooperate with and assist the Superficiary in obtaining or complying with any soil use permits, approvals, consents, authorizations or exemptions granted by the *Commission de protection du territoire agricole du Québec*, construction permits, environmental impact studies or other approvals required for the financing, construction, installation, maintenance, upkeep, operation or removal of the Wind Farm Facilities, including signing the applications for such approvals, the whole at no direct cost to the Owner.
- (i) **Indemnification.** The Owner shall hold the Superficiary harmless from and in respect of any damage or bodily injury resulting from the operations or activities of the Owner or any lessee of the Owner engaged in agricultural or forestry operations.
- (j) **Hazardous materials.** To the Owner's knowledge, the Owner shall not contravene any law, order, regulation or by-law in regard to the creation, manufacture, production, use, storage, actual or impending emission, discharge, disposal, transportation or presence of any substance, material or waste that currently is or will become classified as a hazardous or toxic material or waste, or is subject to any laws, regulations or by-laws applicable to such substance, material or waste, on or under the Property; the Owner shall hold the Superficiary harmless in the event of any violation by the Owner or the Owner's agents or contractors in regard thereto.

OBLIGATIONS OF THE SUPERFICIARY

17. The Superficiary hereby gives the Owner its undertaking that it will observe and implement the principles set forth in the *Terms of Reference for the Siting of Wind Farms on Farmlands and in Woodlands*, which the parties declare that they have read. Without limiting the generality of the foregoing, the Superficiary gives the Owner its undertaking that it will perform the following obligations:
- (a) **Indemnification.** The Superficiary shall hold the Owner harmless from and in respect of any damage to property or bodily injury resulting from the operations or activities of the Superficiary on the Property, including the Right-of-Way.
 - (b) **Choice of locations within the Right-of-Way.** Before commencing construction work, the Superficiary shall consult with the Owner regarding the plan for the development of the Property and shall advise the Owner of the locations chosen for wind turbines, access roads and electrical lines before making any final decision in regard thereto. The Superficiary shall strive to minimize any adverse effects on the Owner's agricultural or forestry operations resulting from the location of access roads and electrical lines.

- (c) **Hazardous materials.** The Superficiary shall not contravene any law, order, regulation or by-law in regard to the creation, manufacture, production, use, storage, actual or impending emission, discharge, disposal, transportation or presence of any substance, material or waste that currently is or will become classified as a hazardous or toxic material or waste, or is subject to any laws, regulations or by-laws applicable to such substance, material or waste, on or under the Property; the Superficiary shall hold the Owner harmless in the event of any violation by the Superficiary or the Superficiary's agents or contractors in regard thereto.
- (d) **Use of soil.** In operating its Wind Farm Facilities, the Superficiary shall make every reasonable effort not to disrupt the Owner's agricultural or forestry operations on the Property.

ASSIGNMENT/RIGHT TO CURE DEFAULT

- 18. **Definitions.** In this deed, "**Assignee**" means and includes:
 - (a) one or more persons engaged in the financing of Wind Farm Facilities, as a lender, investor, purchaser, lessee or otherwise;
 - (b) a purchaser of Wind Farm Facilities or of the Right of Superficies.
- 19. **Assignment.** The Superficiary and any Assignee shall have the right, but not the obligation, to obtain the Owner's consent to: finance the Wind Farm Facilities; grant licences or similar rights (howsoever designated) to one or more Assignees; sell, lease, assign, hypothecate, pledge or transfer to one or more Assignees the Right of Superficies, any or all of the rights in the Right of Superficies or in this deed or any or all of the rights of the Superficiary in the Right-of-Way or in any or all of the Wind Farm Facilities that the Superficiary or any other party may now or hereafter install within the Right-of-Way. The Superficiary or any Assignee shall give the Owner a notice of assignment (including the address of the Assignee for purposes of the sending of notices); failure to give such notice shall not constitute a default, but shall mean instead that the Owner shall not be bound in respect of the Assignee concerned until such time as the said notice has been duly given to the Owner.

20. **Right to cure default.** In order to forestall termination of the Right of Superficies or any partial right therein, the Superficiary (or any Assignee) shall have the right, but not the obligation, at any time prior to termination, to pay any or all of the amounts payable hereunder, and to do or perform such other acts or things as are required of an Assignee or the Superficiary hereunder or as may be necessary in order to forestall termination. Where the Superficiary or an Assignee holds a right in one or more but not all of the Wind Farm Facilities, any failure to perform an obligation stipulated in this deed shall be deemed cured in respect of such partial right of the Superficiary or Assignee, which right shall not be diminished by the Owner, if the Superficiary or Assignee has cured the portion of the default that was attributable to such Superficiary or Assignee, *inter alia* by paying all of the amounts owed that are attributable to the Wind Farm Facilities in which such Superficiary or Assignee holds a right.
21. **Acquisition of rights.** Acquisition of all or any part of the rights of the Superficiary or Assignee in the Wind Farm Facilities or the Right of Superficies by another assignee or any other person by means of the exercise of a hypothecary right or any other similar judicial or extrajudicial proceeding or by means of a sale or transfer having the effect of a sale shall not require the Owner's consent to be obtained, shall not violate any provision of this deed and shall not constitute a default to perform any of the obligations stipulated in this deed; at the time of the acquisition or transfer, the Owner shall acknowledge such assignee or other person as the Superficiary's or the Assignee's lawful assign following the sending of the notice of assignment referred to in section 19.
22. **New Right of Superficies.** If the Right of Superficies is terminated as a result of a default and if, within sixty (60) days following such termination, the Superficiary or an Assignee takes steps deemed acceptable to the Owner to cure the default and to pay the amounts owed and other charges that the Superficiary or the Assignee was required to pay on the date of termination, the Owner shall execute and deliver to the Superficiary or Assignee, as the case may be, a new Deed of Superficies for the Right-of-Way, the cost of such deed to be borne by the Superficiary or Assignee, which deed (i) shall be made for a term equal to the term remaining unexpired before the Right of Superficies was terminated; (ii) shall contain the same obligations, agreements, conditions, provisions and restrictions as this deed (except for those requirements that were fulfilled by the Superficiary or Assignee before the Right of Superficies was terminated) and (iii) shall cover the part of the Wind Farm Facilities in which the Superficiary or the Assignee held a right on the date of termination.
23. **Extension of time for curing default.** If the Superficiary or an Assignee is unable to cure its default to perform an obligation stipulated in this deed, the default shall be deemed cured if: (i) within sixty (60) days following receipt of a notice of default sent by the Owner to the Superficiary, the Superficiary or an Assignee takes possession of all or part of the Right-of-Way or all or part of the Wind Farm Facilities or all or part of this Right of Superficies, or takes judicial or extrajudicial proceedings for the purpose of obtaining such possession; (ii) the Superficiary or Assignee, as the case may be, prosecutes such proceeding with diligence; (iii) after taking possession of all or part of the Right-of-Way or all or part of the Wind Farm Facilities or all or part of this Right of Superficies, the Superficiary or Assignee performs all of the other obligations when required in accordance with the provisions of this deed. If the Superficiary or an Assignee is prohibited, by way of legal action or an injunction issued by a court or because of a measure taken by a court having jurisdiction in matters of bankruptcy or insolvency affecting the Superficiary or a defaulting

Assignee, from taking or continuing the proceedings described above, then the period of sixty (60) days referred to above granted for purposes of taking such proceedings shall be extended for a period of time equal to the time that such prohibition applies.

24. **Certificates, etc.** The Owner shall sign such certificates pertaining to matters relating to the status of the Right of Superficies as the Superficiary may reasonably request, including, if required, confirmation of the absence of any default to perform an obligation stipulated in this deed, such consents to assignments or such agreements as to peaceful enjoyment as the Superficiary or an Assignee may reasonably ask for. The Owner and the Superficiary shall cooperate to have this deed amended to include any provision that the Superficiary or an Assignee may reasonably ask to have included in order to carry out the intent and purpose hereof or preserve an Assignee's security.

DEFAULT AND TERMINATION

25. **Superficiary's right to terminate.** The parties expressly agree that notwithstanding article 1114 of the *Civil Code of Québec*, the Superficiary may terminate the Right of Superficies unilaterally in respect of all or part of the Right-of-Way, at any time, in its sole discretion, provided it bears the cost of abandoning the Right of Superficies.

In order to avail itself of the said option to terminate the Right of Superficies, the Superficiary shall send the Owner written notice by registered mail stating that it wishes to terminate the Right of Superficies and specifying that it shall be solely responsible for all costs and fees resulting from such abandonment of the Right of Superficies.

The said notice shall be accompanied by a draft deed of abandonment of Right of Superficies in the Owner's favour.

The Owner undertakes and agrees in advance to execute the deed of abandonment of the Right of Superficies to be executed in the Owner's favour by the Superficiary pursuant to this section, but only if all removal work and work to restore the Property referred to in section 6 has been performed.

The cost of notices and cost of preparing and publishing the deed of abandonment of the Right of Superficies in the Owner's favour shall be borne by the Superficiary in their entirety, and the Superficiary undertakes and agrees in advance to discharge same to the Owner's complete exoneration.

Such abandonment of the Right of Superficies shall not relieve the Superficiary or its Assignees of any obligations stipulated herein that were unfulfilled prior to the Right of Superficies was abandoned.

26. **Owner's right to terminate.** Saving the qualifications set out herein, the parties have agreed that the Owner may terminate the Right of Superficies in the following events:
- (i) in the event of a material default in the performance of the Superficiary's obligations stipulated in this deed;
 - (ii) if a default notified by the Owner to the Superficiary by means of a detailed written notice is not cured within sixty (60) days following receipt of the notice by the Superficiary, or if more than sixty (60) days is needed to cure the default, if the Superficiary or an Assignee does not begin diligently curing the default within sixty (60) days following receipt of the written notice.
27. **Effect of extinction of the Right of Superficies.** Upon extinction of the Right of Superficies in respect of all or part of the Right-of-Way, the Superficiary shall do the following:
- (i) execute and publish, at the Superficiary's expense in favour of the Owner, a deed of abandonment of the Right of Superficies including a mutual and reciprocal release and discharge from the obligations contained herein by each party to the other;
 - (ii) have first removed all the Wind Farm Facilities or any part thereof in respect of which the Right of Superficies has been extinguished. In order to guarantee the removal of the Wind Farm Facilities following the extinction of the Right of Superficies, security shall be furnished by the Superficiary in accordance with the requirements of the electricity supply contract between the Superficiary and Hydro-Québec.

CIVIL STATUS AND MATRIMONIAL REGIME

28. **Matrimonial regime.** The Owner declares...
- (declaration)*

MISCELLANEOUS PROVISIONS

29. **Force majeure.** If the performance of the Right of Superficies or any obligation stipulated in this deed is prevented or restricted in a material manner owing to an event of Force Majeure (as defined hereafter), the party affected by the Force Majeure shall, upon giving notice to the other party, be relieved of the requirement to perform such obligation to the extent and for the duration of time that the event of Force Majeure prevents, restricts or interferes with such performance.

The affected party shall make every reasonable effort to circumvent or eliminate the cause preventing the obligation from being performed and to resume performing such party's obligations as soon as such cause is eliminated.

“Force Majeure” means and includes fires, earthquakes, tornados, floods or any other serious and unforeseeable fortuitous events; strikes or major labour disputes; wars, disturbances or other forms of violence; or any other similar condition that is uncontrollable or beyond the control of a party hereto. No provision hereof shall relieve the Superficiary of its obligations stipulated herein with respect to the payments to be made to the Owner.

- 30. **Confidentiality.** In accordance with the wishes of the parties, all information about this deed pertaining to financing terms and conditions and the payments stipulated herein shall remain confidential.
- 31. **Successors and assigns.** The Right of Superficies is stipulated in favour of the Superficiary and, to the extent provided in connection with an assignment or other transfer made in accordance with the provisions hereof, in favour or any subsequent Assignee, and their heirs, successors, assigns and legal representatives. Any reference in this deed to the “Superficiary” includes the Assignee in possession of the Right-of-Way.
- 32. **Notices.** Notices and other communications required or permitted to be given under this deed, including payments to be made to the Owner, shall be made or given in writing and shall be deemed to have been received upon delivery made in person to the Owner, the Superficiary or an Assignee, or five (5) days after mailing, by first-class prepaid registered mail, as follows:

To the Owner:

To the Superficiary:

To the Assignee, at the address indicated in the notice sent to the Owner in accordance herewith.

A party may change its address for purposes of this section by sending a written notice of the change to the other parties in the manner described above.

- 33. **Entire agreement; amendments.** This deed constitutes the entire agreement between the Owner and the Superficiary in regard to the subject matter hereof. All agreements and declarations pertaining to the Property, the Right of Superficies or any other matter referred to herein that are not expressly set out in this deed or in a subsequent written instrument signed by both parties are of no force or effect. This Deed of Superficies may not be amended except by written instrument signed by the parties hereto. No purported amendment, including one made verbally, in the ordinary course of business or because no response to a communication was received, shall be binding on the parties.

34. **Applicable law.** This deed shall be governed by the laws of the Province of Québec and the laws of Canada applicable therein. Should any proceedings be taken pertaining to this deed, a party that wins its case or receives an award from the court in an amount approximately equal to the amount claimed shall be entitled to request reimbursement of reasonable attorneys' fees incurred in connection with the proceedings taken.
35. **Partial invalidity.** If a provision of this deed should be declared null, invalid or unenforceable by final judgment of a competent court, the other provisions hereof shall continue to have full effect and be enforceable against the parties.
36. **Tax credit.** If, in accordance with the provisions of any applicable law, the Superficiary should no longer qualify for a tax credit, benefit or incentive for alternative energy expenditures, the Superficiary may, at its option, cause the Owner and the Superficiary to amend this deed or replace it with another document so as to convert the Superficiary's right in the Property to a substantially similar right such that the Superficiary would qualify for the tax credit, benefit or incentive, on the express condition that the Owner's rights not be impaired in any manner by such conversion.

SPOUSE'S CONSENT

37. **[If applicable.]** _____, hereinafter called the "**First Intervening Party**", spouse of the Owner, intervenes herein and declares and confirms that the Owner's civil status and matrimonial regime are correctly described herein, and after reading this deed, consents and agrees to all of the terms and conditions of this deed, without reservation or qualification.

CONSENT OF HYPOTHECARY CREDITORS

INTERVENTION

AND THERE FURTHER INTERVENED HEREIN THE FOLLOWING ENTITY:

38. **[If applicable.]** _____, hereinafter called the "**Second Intervening Party**", intervenes herein and declares that it is the hypothecary creditor of the Property pursuant to the following deeds;

(description of deeds)

and after reading this deed, consents and agrees to all of the terms and conditions of this deed and its appendices, without reservation or qualification, expressly waives, in regard to the said hypothecs, in favour of the Superficiary (and its assigns), hereto present and accepting, the benefit of accession in respect of the Wind Farm Facilities to be constructed or installed on, above, under, along or across the Right-of-Way, and agrees that discharge may be granted from the said hypothecs, as necessary, in respect of the said Wind Farm Facilities and the Electric Power Collection System Facilities.

39. **Special conditions.** When he/she signed an Option agreement to acquire a Right of Superficies, on *(date)*, the Owner required the Superficiary to meet certain specific requirements which are listed and stated in an appendix, which appendix has been signed for identification and acknowledged as authentic by the parties, in the presence of the notary, who received their respective signatures.

With respect to the requirements set out as an appendix to this deed, the Superficiary expressly agrees and undertakes to satisfy the said requirements in the Owner's favour, as agreed between the parties when the Option agreement was signed on *(date)*.

WHEREOF ACT DONE AND PASSED in _____ , under number _____ of the minutes of the undersigned notary.

AND AFTER DUE READING, the parties have signed in _____ , Province of Québec, with and in the presence of the undersigned notary.

Superficiary

By:

Owner

Mtre _____ , Notary

Annexe B

Future harvest yields
from private forests

**Future harvest yields from private forests
(volume after 40 years, in net apparent cubic metres)***

Region	Type of private forest**										
	FS	FF	CS	SHI	SM	MS	HIS	M	MHT	MHI	HI
La Pocatière	189.7	172.2	203.2	186.0	234.0	192.0	186.0	175.5	222.9	216.7	187.8
Nicolet	181.9	193.5	191.6	184.0	218.0	190.0	176.0	152.8	231.2	171.3	111.5
Eastern Townships	183.8	191.6	195.5	184.0	224.0	176.0	188.0	187.8	222.9	161.0	144.5
Beauce	180.0	187.7	193.5	178.0	242.0	190.0	176.0	198.2	225.0	177.5	150.7
Lower St. Lawrence – Gaspésie	172.2	183.8	187.7	178.0	226.0	184.0	164.0	169.3	198.2	189.9	179.6
Saguenay	120.0	178.0	118.0	140.0	128.0	128.0	138.0	109.4	231.2	216.7	165.1
Mauricie	152.9	209.0	168.4	186.0	240.0	242.0	156.0	183.7	264.2	258.0	140.4
Québec City	137.4	178.0	135.5	168.0	218.0	196.0	148.0	227.1	245.6	272.5	167.2
Montréal	178.0	150.9	150.9	166.0	254.0	198.0	184.0	185.8	216.7	243.6	140.4
Abitibi	110.3	104.5	127.7	152.0	0.0	0.0	116.0	113.5	99.1	0.0	130.0
Laurentians	220.6	218.7	240.0	234.0	276.0	276.0	222.0	258.0	256.0	208.5	194.0
Pontiac	183.8	174.2	224.5	226.0	270.0	284.0	204.0	286.9	235.3	210.6	227.1
Labelle	209.0	222.5	234.2	216.0	258.0	266.0	204.0	270.4	256.0	185.8	200.2
Gatineau	201.3	187.7	269.0	242.0	268.0	274.0	208.0	241.5	247.7	237.4	216.7

* To calculate volume after 30 years:

Annual growth rate: 3%.

Conversion factors: 1 solid cubic metre of softwood = 1.5 apparent cubic metres

1 solid cubic metre of hardwood = 1.6 apparent cubic metres

Rate of reduction from volume of gross merchantable timber to volume of net merchantable timber: 4%.

** FS: Fir-Spruce
 CS: Cedar-Softwood
 SM: Softwood-Maple
 MS: Maple Softwood
 M: Sugar (Maple)
 MHT: Maple-Tolerant Hardwood
 HI: Intolerant Hardwood

FF: Balsam Fir
 SHI: Softwood-Intolerant Hardwood
 HIS: Intolerant Hardwood-Softwood
 MHI: Maple-Intolerant Hardwood

Source: Fédération des producteurs de bois du Québec and
 ministère des Ressources naturelles du Québec