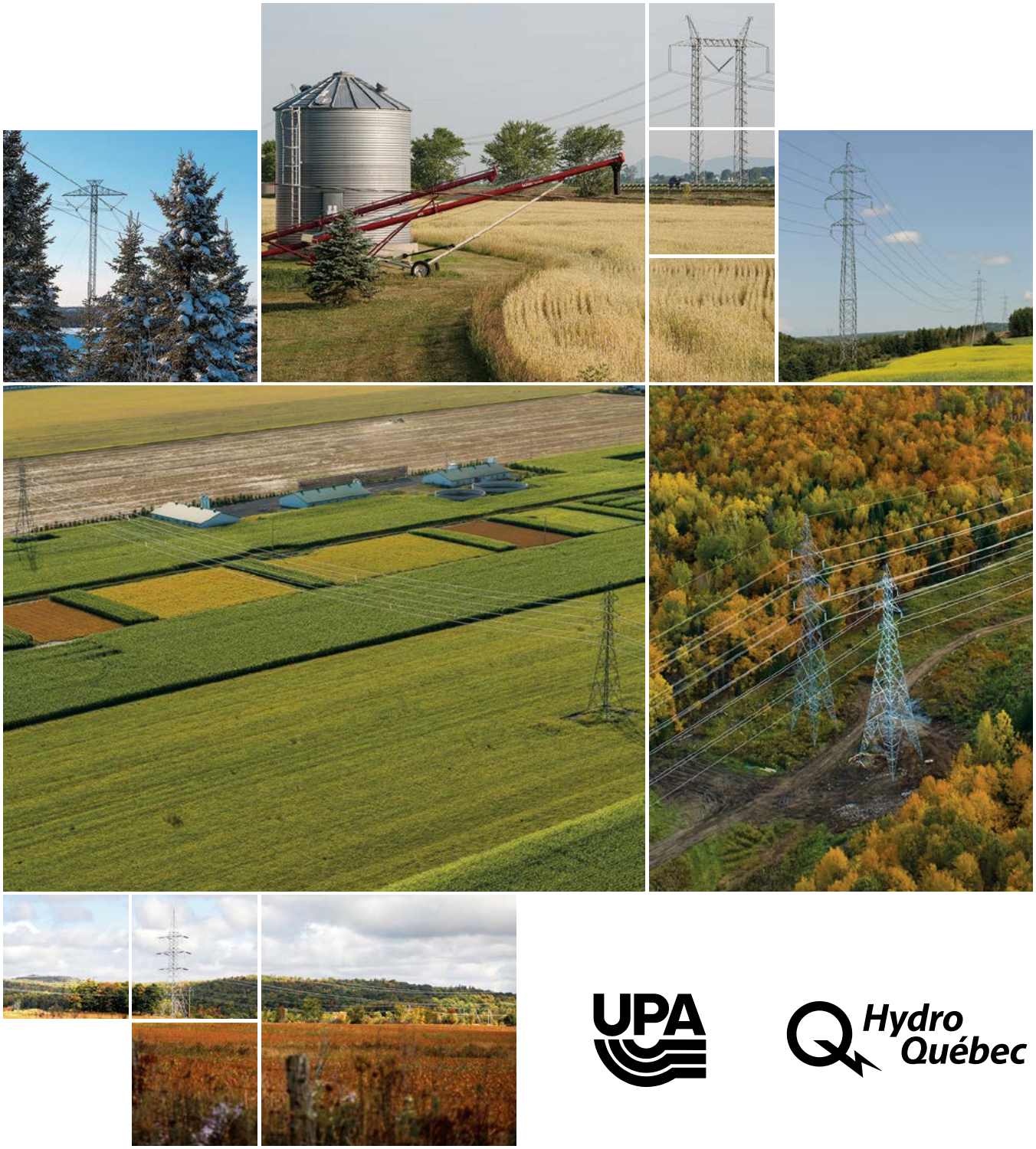
Agreement on the Siting of Power Lines on Farms and in Woodlands

September 2014



UPA

Hydro Québec

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Introduction

The *Hydro-Québec–UPA Agreement on the Siting of Power Lines on Farms and in Woodlands* (the Agreement) sets forth specific rules for the siting of electric power transmission facilities on farmland and in woodlands as well as the compensation measures for such projects. The Agreement has five parts:

- *Part 1 – Impacts of power lines and substations*: identification of types of impacts associated with the different stages of the work and impacts arising from the presence of a line or substation.
- *Part 2 – Siting of power lines and substations*: summary of the main criteria applying to the siting of power lines and substations.
- *Part 3 – Mitigation measures and revegetation of rights-of-way*: information on mitigation measures to reduce the impact of the construction of power lines or substations and on their application.
- *Part 4 – Maintenance of the transmission system*: description of the methods Hydro-Québec uses to ensure respect for private property when maintaining overhead lines and controlling vegetation along rights-of-way. Also described are measures to enable secondary use of rights-of-way compatible with power line operation.
- *Part 5 – Compensation*: explanation of the different types of financial compensation paid to landowners, the rules governing compensation, the methods of its calculation and the obligations of the parties.

History of the Agreement

In the early 1980s, Hydro-Québec and the Union des producteurs agricoles (UPA), the association representing Québec farmers, were looking to determine a uniform method of compensating farmers affected by the construction of power lines and substations that would be applied across the province. A consultation committee was thus formed (which later became the Hydro-Québec–UPA liaison committee) to help both parties understand and accept the constraints and difficulties of their respective activities.

The deliberations of this committee led to the signing, in 1986, of the *Entente Hydro-Québec–UPA sur le passage des lignes de transport et de répartition en milieux agricole et forestier*. A first revision of this agreement was made in the fall of 1988.

In the fall of 1997, at the request of the Hydro-Québec–UPA liaison committee, a special committee formed of representatives of both organizations reviewed and revised the text of the agreement to make it more functional. When the new version of the Agreement was issued, in September 1999, it had a new name: the *Entente Hydro-Québec–UPA sur le passage des lignes de transport en milieux agricole et forestier* or the *Hydro-Québec–UPA Agreement on the Siting of Power Lines on Farms and in Woodlands*. Additional amendments to the Agreement have since been made over the years by the parties as needed.

Reflecting changing practices

This latest version of the Agreement, signed in 2014, is the result of a second complete revision of the content of the Agreement since the first version appeared in 1986. As in the past, the parties met regularly to ensure compliance with the revised Agreement. All parts of the Agreement were revised to reflect changes in farm and forestry practices and in Hydro-Québec's work methods.

Impacts of Power Lines and Substations

1.1 INTRODUCTION

Hydro-Québec and the Union des producteurs agricoles (UPA), the association representing Québec farmers, have drawn up a list of the impacts that power lines[1] and substations can have on farms and woodlands. These impacts fall into two broad categories.

Temporary impacts: These are impacts that arise during the actual construction or dismantling of a power line or substation. They vary depending on the type of structure, the type of farm or forestry operation and, to some extent, the nature of the soil. These impacts can be reduced considerably by implementing preventive or remedial mitigation measures (see Part 3, Mitigation).

Permanent impacts: These are impacts that stem from the presence of a power line or substation in the environment. They too can vary depending on the type of structure and the type of farm or forestry operation. Although these impacts cannot be eliminated, they can be attenuated in some cases by optimal siting of the line right-of-way or the substation and by choosing the type and location of support structures according to the kind of farming or forestry operation involved (see Part 2, Siting).

1. The term *line* herein means any electric power transmission line of 44 kilovolts (kV) or more and its right-of-way.

1.2 TYPES OF IMPACTS

1.2.1 Temporary impacts during construction and dismantling of power lines and substations

Following are some of the temporary impacts that can occur within or outside a line right-of-way or substation site during the construction or dismantling of facilities:

- Crop losses
- Impacts associated with staking of rights-of-way
- Reduced crop yields due to rutting and soil compaction
- Disturbance of topsoil (rocks and inert soil mixed in with topsoil)
- Alteration of underground or surface drainage systems
- Alteration of irrigation systems
- Damage to ditches
- Broken fences, which can also interfere with livestock control
- Impacts of construction noise near livestock operations potentially sensitive to noise (raising of poultry, rabbits or fur-bearing animals, for example)
- Temporary disruption of cropping activities
- Loss of time (spent negotiating, for example)
- Loss of revenue (cash flow) while awaiting compensation
- Presence of construction debris and related waste
- Damage to access roads and related infrastructure
- Cut and damaged trees
- Erosion damage

1.2.2 Permanent impacts of presence of power lines and substations

Following are some of the permanent impacts stemming from the presence of power lines or substations in the environment:

- Loss of farmland or woodland
- Loss of revenue, possibly compromising profitability
- Loss of time (time spent driving around structures, for example)
- Risk of farm or forestry machinery running into structures
- Creation of enclaves
- Use restrictions and other inconveniences associated with easements (no building or installation of structures in rights-of-way, for example)
- Alteration of drainage and irrigation systems
- Changes to farming or forestry operations
- Use of aircraft for agricultural or forestry purposes more dangerous or impossible
- Restrictions on land improvement work (leveling, ditching and other mechanical operations, for example)
- Proliferation of weeds
- Risk of windthrow and desiccation along rights-of-way in wooded areas
- Electric and magnetic induction in fences, buildings, machinery, etc.
- Visual impact
- Noise from substation operation
- New access roads through woodland
- Additional easements and infrastructure on property (line corridor creates an opening)

Regarding electric and magnetic fields, Hydro-Québec continues to support research, monitor knowledge developments and share its knowledge with partners and the public.

Siting of Power Lines and Substations

2.1 INTRODUCTION

This section summarizes the main criteria that apply to the siting of power lines[1] and substations on farms and woodlands.

In determining the best location for power lines and substations, Hydro-Québec strives to reduce the impact on elements of the host environment as much as possible. This involves several steps in the draft-design phase of a project:

- Environmental inventory
- Analysis of line corridors and substation siting areas
- Establishment of line routes and substation sites
- Selection of support structures
- Identification of optimal line route and optimal substation site

The exact locations of support structures are only determined during project implementation. With projects involving farmland or woodland, Hydro-Québec consults the Union des producteurs agricoles (UPA) through its regional federations at each step. Regional wood producers' unions are included in the consultations when necessary. These consultations help to minimize impacts on farms and woodlands and promote project acceptability by the farmers and wood producers concerned.

Hydro-Québec is ultimately responsible for siting power lines and substations. Nonetheless, the utility submits its decision to municipalities, regional county municipalities (RCMs), the Commission de protection du territoire agricole (CPTAQ), the commission aimed at protecting Québec farmland ,and concerned Québec government departments.

1. The term *line* herein means any electric power transmission line of 44 kilovolts (kV) or more and its right-of-way.

2.2 GENERAL CONSIDERATIONS

The UPA and Hydro-Québec acknowledge that 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 host environment. Choices must therefore be made in cooperation with the concerned regional federations of the UPA.

As a general rule, siting criteria must be applied in such a way as to cause the least disturbance to farms and woodlands while striving to establish the shortest possible route and to limit the number of angles between the two points to be connected. Longer routes generally result in additional impacts (more landowners affected, more support structures, more trees felled, etc.) as well as higher costs.

2.3 SITING CRITERIA FOR FARMS AND WOODLANDS

The following criteria shall apply as much as possible when selecting substation locations and line routes on farms and woodlands:

- Site substations and power lines on the edges of or outside agricultural zones under the *Act respecting the preservation of agricultural land and agricultural activities*.
- Site substations and power lines on land with the lowest agricultural or forestry potential in the study area according to maps of potential prepared by the Ministère de l'Agriculture, des Pêcheries et de l'Alimentation (MAPAQ) and the Ministère des Forêts, de la Faune et des Parcs (MFFP).
- Protect high-potential cropland, maple stands, orchards, plantations and other managed forests, high conservation value woodlands and windbreaks, bearing in mind system-compatible secondary use of power line rights-of-way in these wooded areas.
- Run power lines along lot, leasehold or other cadastral lines, and avoid running power lines diagonally across plots of land.
- Site substations and power lines on the edges of agricultural or forest zones.
- Limit the number of support structures on cultivated land, endeavoring instead to locate them in residual spaces, groves or strips of woodland.
- Protect land that has underground drainage or will have it in the short- or medium-term.
- Follow existing line corridors when they meet the preceding criteria, bearing in mind the possible effect of adding structures and rights-of-way where other types of infrastructure are already sited.
- Avoid areas subject to erosion.
- Keep power lines and substations away from farm buildings and other farm facilities.

The preceding criteria are not listed in order of importance. Their application varies from one region to another depending on the nature of the project and the host environment (existing and foreseeable).

Hydro-Québec and concerned regional federations of the UPA shall work together to select the shortest line routes with the fewest angles possible.

2.4 CHOOSING SUPPORT STRUCTURES

The studies Hydro-Québec undertakes for any power-line project include assessment and selection of the most appropriate support structures. In making the selection, the topography and terrain are considered as well as load and line-voltage criteria.

When towers are being considered, Hydro-Québec develops scenarios with reduced-footprint towers as well as conventional lattice towers.

On land that is or is going to be cultivated, Hydro-Québec prefers reduced-footprint towers but cannot guarantee that this solution will be selected in all situations.

2.5 COOPERATION

Hydro-Québec considers the UPA and its regional federations its primary collaborators where farmland or woodland is concerned.

Regarding the siting of substations and power lines (line routes and support structures), Hydro-Québec and the regional federations of the UPA shall cooperate in accordance with the guidelines set forth below.

Cooperation shall take place during each of the three stages normally involved in siting studies (based on the principle of gradually reducing the zone of study):

1. Identification of study area, line corridors and areas suitable for substation sites
2. Determination of possible line routes and substation sites
3. Definitive choice of line routes and substation sites, including types of supports to be used and their preliminary siting

Those in charge of carrying out the studies shall meet with the regional federations as follows:

- In the first stage, to discuss the following: preliminary maps of the study zone; proposed line corridors; substation siting areas; and elements of comparison.
- In the second stage, to discuss the following: preliminary maps of proposed line routes and substation sites; results of the preliminary comparative analysis.
- In the third stage, to discuss the following: preliminary maps of chosen line routes and substation sites; proposed structure supports and their siting (for optimization); and mitigation measures. At this stage, the regional federations of the UPA can give Hydro-Québec feedback on all these elements.

During this period, the regional federations of the UPA shall also be invited to take part in the public consultation process, as will local government authorities (municipalities and RCMs).

Before establishing the definitive siting of the support structures, Hydro-Québec shall meet with each landowner concerned so constraints related to the particularities of his/her land and crops can be taken into account, within the guidelines set forth in applicable agreements.

In cases where requested changes would have an impact on more than one landowner, Hydro-Québec shall organize meetings on a line-segment basis and invite all landowners concerned.

All drawings and specifications produced as a result of meetings with landowners shall comply with agreements between Hydro-Québec and the regional federations of the UPA and shall be appended, if need be, to applications for government approval of the project.

PART 3 | MITIGATION

Mitigation Measures and Revegetation of Rights-of-Way

3.1 INTRODUCTION

This section of the agreement deals with mitigation measures to reduce the impact of the construction of power lines or substations on farmland and in woodlands.

These measures also apply, with necessary adaptations, to major rehabilitation, renovation and reconstruction projects requiring power line replacement as well as to permanent dismantling of power lines or substations.

Because of the very nature of the work and the equipment used, Hydro-Québec obviously cannot completely eliminate disturbances on farms and in woodlands. However, by applying the protective, remedial and restoration measures set out in this part of the agreement, certain problems can be prevented and project impacts can be limited.

Hydro-Québec is committed to ensuring that these measures are applied and shall include them in contracts signed with contractors. Hydro-Québec assumes responsibility for compliance with the measures herein when construction and site restoration work are carried out.

3.2 GENERAL PRINCIPLES

The preventive and remedial measures shall enable Hydro-Québec to restore the right-of-way to its original condition, insofar as is physically possible, once the work is completed.

In particular, mitigation measures are intended to restore the original fertility of cropland. Altered or disturbed areas of the right-of-way shall be leveled as quickly as reasonably possible, barring agreement to the contrary with the landowner. In addition, all debris generated by the work shall be removed from the right-of-way.

The measures outlined below focus on damage prevention. Should damage occur despite preventive measures taken by the work supervisor and the construction crew and despite the application of remedial measures, site employees specialized in this field shall assess the damage and promptly compensate landowners.

3.2.1 Site supervision

Hydro-Québec's work supervisor shall be responsible for ensuring compliance with this agreement on the work site. The work supervisor shall oversee the implementation of all environmental protection measures and any special agreements reached with landowners when the easement was acquired and the draft-design studies were conducted. The work supervisor or his/her representative shall also serve as the go-to-person for landowners during clearing, construction, site restoration and dismantling of facilities.

Hydro-Québec shall assign qualified advisory staff to the work supervisor, specifically a person with a university degree or continuing education in agriculture, forestry or environmental science. In addition, the work supervisor shall be accompanied or supported by a person qualified to assess construction damage and make settlements with landowners.

The work supervisor shall be responsible for the following:

- Ensuring that all authorizations have been obtained before work begins on private property
- Ensuring that support structures are located as stipulated in drawings and specifications
- Ensuring compliance with mitigation measures, agreements with landowners and obligations undertaken or imposed in connection with government permits
- Recommending preventive measures to reduce the impact of construction (on soil compaction and topsoil thickness, for example)
- Promptly rectifying problems that may arise on farms and in woodlands during construction
- Taking necessary measures to restore rights-of-way and access roads to their original condition or better within a reasonable time
- Maintaining contact with landowners to inform them of the progress of the work
- Recommending restriction of certain activities, including completely halting the work

3.2.2 UPA representative at the site (UPARS)

During construction of a new power line on farmland or woodlands, a UPA representative at the site (UPARS) may be appointed to facilitate agreements between landowners and Hydro-Québec and to serve as an additional liaison between them. The decision on whether to retain the services of a UPARS shall be made jointly by the UPA federations concerned and Hydro-Québec when the first information meetings about the project are held. If the UPA federations concerned and Hydro-Québec do not agree on the need for a UPARS, the committee responsible for interpreting the provisions of the *Hydro-Québec–UPA Agreement on the Siting of Power Lines on Farms and in Woodlands* shall decide.

3.2.2.1 Choosing the UPARS

The parties agree that the following shall be considered when selecting the UPARS:

- On assuming his/her duties, the UPARS must have a thorough understanding of the terms of the *Hydro-Québec–UPA Agreement on the Siting of Power Lines on Farms and in Woodlands*.
- The UPARS may not be a landowner directly affected by construction of the power line.
- The UPARS may not be an elected representative or a member of the administrative staff of the UPA or Hydro-Québec.
- If the nature of the work site so warrants, more than one UPARS may be appointed.
- There shall be consensus between the parties on all UPARS selected.

The UPARS reports to the UPA, but costs related to the work of the UPARS are assumed by Hydro-Québec.

3.2.2.2 Role of the UPARS

The duties of the UPARS are as follows:

1. To serve as an additional liaison between Hydro-Québec and the landowner, ensuring, however (from the start of construction until site restoration is completed), that the landowner first contacts the Hydro-Québec representative assigned to him/her. The UPARS is neither an evaluator nor an inspector of the work but rather, a facilitator between the landowner and Hydro-Québec.

    1a) To give the landowner additional explanations or clarifications regarding implementation of the *Hydro-Québec–UPA Agreement on the Siting of Power Lines on Farms and in Woodlands*

    1b) To coordinate his/her activities with those of the Hydro-Québec representative so that action can be taken rapidly

2. To facilitate agreements between Hydro-Québec and owners of farms and woodlands on mitigation measures and site restoration, and to try to find amicable solutions to disputes submitted for his/her consideration.

3. To submit to the UPA and Hydro-Québec a written report on every visit with a landowner as well as a detailed weekly review.

3.2.2.3 Procedures

The contract with the UPARS shall be consistent with the mandate described in section 3.2.2.2 herein and shall include the terms and conditions to which the UPA and Hydro-Québec have agreed:

- In all matters relating to landowners, the Hydro-Québec representative shall be the contact person for the UPARS.
- The Hydro-Québec representative shall be the first to respond to landowners.
- At the request of a landowner, the UPARS may meet with said landowner. However, the UPARS shall speak to the Hydro-Québec representative to find out what has been done so far and what decisions Hydro-Québec has made.
- The UPARS shall visit the site, accompanied by the Hydro-Québec representative, before construction starts, post-construction and before restoration of the right-of-way begins.
- How and when the UPARS may access the work site shall be established by the Hydro-Québec representative and the UPARS together before construction begins.
- Hydro-Québec may ask the UPARS to intervene quickly in problematic situations.
- The UPARS and the Hydro-Québec representative shall meet twice a month to review work in progress.
- The UPARS shall never intervene, directly or indirectly, with the contractor responsible for carrying out the work. If the UPARS becomes aware of situations that could generate conflict between a landowner and Hydro-Québec, the UPARS shall inform the Hydro-Québec representative.
- The UPARS shall meet with the work supervisor appointed by Hydro-Québec to obtain the schedule for the construction work and the restoration of the right-of-way.

3.2.3 Work site access

Duly authorized representatives of landowners or the regional federation of the UPA may enter the construction site. For safety reasons, however, they must first obtain permission from Hydro-Québec's work supervisor and be accompanied by the latter's representative.

3.2.4 Notice of start of work

Hydro-Québec shall notify each landowner in writing at least two weeks prior to the start of work on his/her property. Hydro-Québec shall also notify the regional federation of the UPA of the start of work on its territory. The work supervisor shall maintain contact with the landowners throughout the work and coordinate the work to interfere as little as possible with farming or forestry operations.

3.2.5 Use of property

Hydro-Québec shall obtain written permission from landowners before using property or infrastructure off the right-of-way for any operation or purpose.

3.2.6 Sensitive or vulnerable elements

Hydro-Québec shall establish with the landowner a list of sensitive or vulnerable elements in and off the right-of-way which could be affected by the work and shall apply appropriate preventive measures. The landowner is encouraged to inform Hydro-Québec of any potentially sensitive environmental elements of which he/she is aware.

3.2.7 Copy of Agreement

All landowners affected by the work shall receive a copy of the *Hydro-Québec–UPA Agreement on the Siting of Power Lines on Farms and in Woodlands* at the initial communication meeting or on the Hydro-Québec representative's first visit to their home.

3.2.8 Safety

Hydro-Québec shall ensure that the construction site is safe at all times.

3.3 GENERAL CLAUSES

3.3.1 Farm or access roads

Hydro-Québec shall obtain written permission from the landowner before using or building an access road off the right-of-way. The agreement with the landowner shall include conditions governing use of the access road.

Work site access roads shall be clearly indicated at the site. Hydro-Québec shall install infrastructure for such roads and maintain it for the duration of the project.

When construction is completed, roads shall be restored to their original condition or better. One year (one freeze-thaw cycle) of normal road use shall elapse before Hydro-Québec'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 shall be of the same size and type as the material used in the road. Hydro-Québec shall bring in the material or take it from a site that the landowner has approved.

During the work, Hydro-Québec shall ensure that the landowner or leaseholder is informed of safety rules that apply at the work site. Hydro-Québec shall indemnify and hold harmless the landowner or leaseholder from and against any damage when travelling on a road within the limits of work areas, unless said damage is caused by gross negligence or intentional misconduct on the part of the landowner or leaseholder.

3.3.2 Traffic on right-of-way

3.3.2.1 Woodland

Ruts shall be leveled if they hinder forestry operations.

3.3.2.2 Farmland

The measures below apply only to cultivated land and land Hydro-Québec turns over to revegetation upon completion of the work.

Traffic in the right-of-way shall generally be restricted to one lane eight metres wide, without limiting easement rights held by Hydro-Québec.

To reduce the traffic area as much as possible, the road in the right-of-way shall normally run along the support structures, unless features of the environment require otherwise.

To the extent possible, Hydro-Québec shall ensure that the road in the right-of-way does not prevent the landowner or occupant from entering neighboring fields. Ruts shall be leveled if they hinder farm operations.

Hydro-Québec shall establish the access roads to the right-of-way and the restrictions on traffic within the right-of-way. The road in the right-of-way shall be established by Hydro-Québec and the contractor before construction starts. In some cases (in sensitive areas or when special arrangements have been made with the landowner), access roads may be marked out on the ground.

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

When the construction work is completed, Hydro-Québec shall remove temporary structures and restore the land to its original condition.

3.3.3 Fences and gates

After reaching an agreement with the landowner, Hydro-Québec shall install gates or temporary fences inside the right-of-way where necessary to protect crops, livestock and property off the right-of-way.

Fences inside the right-of-way that run along public access roads shall have rigid gates to prohibit access to the right-of-way outside working hours.

In case of existing electric fences, Hydro-Québec may do one of the following:

- Install an arch
- Modify the power supply to supply the fence from both sides of the gate

Hydro-Québec may use any other method satisfactory to the landowner.

Gates shall be installed as follows:

- Shore up posts on either side of the opening to maintain mechanical tension in adjacent spans.
- Manually cut wire and, if adequate, use it to build the gate; if not, recover the cut wire and use material of equivalent or higher quality to build the gate.

Hydro-Québec shall ensure that the contractor responsible for the work maintains the gates in good condition and keeps them closed at all times. In addition, any fence or temporary gate shall be visible at all times to anyone with access to the right-of-way.

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 is completed, temporary gates shall be removed, barring agreement otherwise with the landowner.

If stone or pole fences must be taken down, the material removed shall be stored and used to rebuild the fence when the construction work is completed.

Hydro-Québec shall maintain appropriate protection systems for livestock. Any fence needed to keep out particular kinds of animals shall be described in specific mitigation measures, e.g., fences running along the right-of-way or allowing animals to cross it.

3.3.4 Surface drainage

Hydro-Québec shall take stock of drainage in the right-of-way 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.

Hydro-Québec shall obtain the landowner's written permission before using an existing bridge or culvert. Hydro-Québec shall properly maintain any such bridge or culvert used and shall make any necessary repairs.

A Hydro-Québec professional shall approve any plans to change surface drainage for the duration of construction.

Throughout construction, Hydro-Québec shall ensure that surface drainage systems remain in working order and that ditches are kept free of obstructions.

Temporary culverts installed and used by Hydro-Québec shall 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 shall be wide enough to allow water to flow freely.

If a bridge deck is installed, it shall cover the banks enough to ensure bank stability and be built to specifications issued by Hydro-Québec.

Barring agreement otherwise with the landowner, Hydro-Québec shall remove bridges and culverts, clean ditches and restore banks to their original condition when the construction work is completed.

Hydro-Québec shall remove any accumulation of sediment in a ditch or waterway resulting from construction and affecting the normal flow of drainage systems.

3.3.5 Underground drainage

Before construction commences, Hydro-Québec shall locate underground drainage systems in the work zone based on indications supplied by the landowner.

During construction, Hydro-Québec shall ensure that the road in the right-of-way is located between two drains when the latter run parallel to the right-of-way.

On soil of low-bearing capacity, places where drains are crossed by roads shall be protected.

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

When the excavation is filled, Hydro-Québec shall repair damaged drains and ensure normal flow in the drainage system, applying standards for irrigation and drainage projects set forth in the *Guide de référence technique en drainage souterrain et travaux accessoires* (CRAAQ-AEDAQ and MAPAQ). In case of rutting, which could cause drains to collapse, the landowner may demand excavation to check the drains.

If a damaged drain must be repaired, Hydro-Québec shall notify the landowner so that he/she can be present during the repair. For extensive repairs, Hydro-Québec or the landowner may request that they be done by a specialized contractor. The work shall be approved by Hydro-Québec and the landowner (or the UPARS) before final filling.

When an underground drainage plan that has not yet been implemented must be altered because of the construction work, Hydro-Québec shall have the designer modify the drainage plan at Hydro-Québec's expense.

In the following year, Hydro-Québec shall return to the site with the landowner in the spring and the fall to check that the drainage system affected by the construction is working properly.

3.3.6 Soil compaction

The measures for mitigating soil compaction shall apply only to cultivated land and land that Hydro-Québec turns over to cultivation upon completion of construction.

Under certain unfavorable conditions (soaked soil, winter thaw and other critical conditions), 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 shall be taken:

- Schedule the work during seasons when the bearing capacity of the soil is best.
- Restrict access to the work site by certain vehicles or machinery when the bearing capacity of the soil is inadequate.
- Only use vehicles or machinery that are tracked or have extra-wide tires.
- Limit machine traffic to one lane and minimize the number of trips.
- Use a load-bearing mat or mattress.
- Suspend certain phases of the work when conditions are unsatisfactory.
- Use any other methods recommended by the agricultural specialist.

Should soil compaction occur despite these measures, Hydro-Québec shall decompact the soil when the work is completed using the measures described in section 3.4.6 on site restoration.

In temporary work areas in woodlands, Hydro-Québec shall avoid activities that might cause soil compaction. Should soil compaction occur despite preventive measures agreed upon with the landowner, Hydro-Québec shall loosen the soil when its use of the temporary work area has ended.

3.3.7 Noise

During construction, Hydro-Québec shall bear in mind the inconvenience caused by noise, make efforts to reduce it and comply with ambient noise standards wherever in effect.

Prior to beginning the work, Hydro-Québec shall use different sources of information (including information provided by the landowner) to identify zones where special noise restrictions apply and shall indicate these zones in drawings and specifications. Preventive measures shall be included in the special contract conditions and the zones shall be clearly marked off.

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

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

3.3.8 Smoke, dust and other pollutants

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

Equipment must be free of leaking oil, gasoline or other pollutants. Dumping and burying of these products at the work site are prohibited. When work commences, Hydro-Québec 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 shall be quickly cordoned off and the product flow stopped with an absorbent material. If need be, affected topsoil shall be removed and replaced with topsoil from an authorized site.

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

No burning or burying of waste from the work site shall be permitted on farmland. Such refuse shall be transported to an authorized site. In woodlands, written authorization from Hydro-Québec and the landowner is required to burn slash and bury stumps.

When use of an access road produces dust that is a nuisance to people or the environment, measures shall be taken to reduce it.

3.3.9 Wells and water supply points

Before construction begins, Hydro-Québec shall identify wells and sources of drinking water that might be affected and, if need be, shall establish specific mitigation measures to protect them. Water samples shall be taken before, during and after construction to ensure that the quality and quantity of water remain unaltered. Should this not be the case, Hydro-Québec shall take necessary measures to eliminate the cause of contamination or reduced water flow. On request, Hydro-Québec shall send the water sampling results to the landowner.

3.4 CLAUSES PERTAINING TO CONSTRUCTION

3.4.1 Surveying

On cultivated land, survey stakes used for siting structures shall normally be driven into the ground near fences or ditches close by.

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

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

3.4.2 Clearing

Hydro-Québec shall ensure that clearing causes the least possible disturbance and that unusable wood debris is disposed of in an orderly fashion.

Clearing methods shall be clearly indicated at the site and must be complied with:

METHOD A — All trees, shrubs and brush are cut manually or mechanically.

METHOD Aps — All trees and shrubs are cut manually or mechanically, except shrubs no more than 2.5 m high at maturity. The footprint of equipment traffic is limited to 25% of the area cleared, excluding the main trail. All mechanized equipment shall use the same trails. In case of rutting in secondary trails, the mechanized work is halted, the ruts are leveled and the work is resumed manually.

METHOD B — All trees and shrubs are cut manually, except shrubs no more than 2.5 m high at maturity. Skidding, forwarding and chipping are performed with low-ground-pressure equipment. The equipment travels only within a central strip 5 m wide.

METHOD B2 — All trees and shrubs are cut manually, except shrubs no more than 2.5 m high at maturity. Felled trees and shrubs are trimmed, bucked into lengths of no more than 1.2 m and left on site.

METHOD C Manual selective cutting. Maximum height of trees to be preserved is indicated for each area cleared using method C. All trees above this height are felled, trimmed, bucked and left in the undergrowth with cutting residues. A strip no more than 5 m wide in the centre of the right-of-way is cleared for conductor unwinding and equipment traffic if there is no bypass road.

Hydro-Québec applies clearing methods Aps, B, B2 and C in sensitive environments (peat bogs, riparian zones, erosion zones, etc.) and at sites where trees over 2.5 m tall at maturity can be preserved without jeopardizing the safety or reliability of the electric facilities.

Trees shall be felled so they fall along the axis of the right-of-way to prevent damaging trees off the right-of-way.

The contractor responsible for the clearing operations shall burn, chip or remove from the right-of-way all cutting residue,[1] waste, stumps, crowns, brush, branches and other wood debris. Burial on site or stacking within or off the right-of-way is prohibited without the written consent of Hydro-Québec and the landowner.

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

How the wood is cut up shall be based on the local market, as determined by concerned wood producers' marketing board (minimum lengths of four feet), and the expressed wishes of the landowner. Barring agreement otherwise with the landowner, the wood shall be stacked along the edge of the right-of-way. In all cases, the cut wood shall not be moved more than 100 m.

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

Hydro-Québec shall ensure that sensitive areas (sites where clearing methods Aps, B, B2 or C apply) are properly restored.

Hydro-Québec may have the landowner undertake the initial clearing, for remuneration equivalent to the average price paid by Hydro-Québec for such work.

3.4.3 Excavation (structure foundations)

Mitigation measures related to excavation apply to cultivated land and land that Hydro-Québec turns over to cultivation.

Where excavation is to take place, the topsoil shall be separated from inert soil and dumped where it can be recovered. The thickness of the layer of topsoil removed shall be established based on agricultural practice but may not exceed 30 cm.

If excavated material is not used as fill, it shall be dumped in an authorized place or a place agreed upon with the landowner, in accordance with environmental standards. However, if the material is to be used as fill, it shall be stored temporarily, taking care not to mix it with topsoil. To this end, the topsoil at the storage site shall first be removed and placed on a membrane.

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1. Cutting residue may be recovered for biomass production subject to agreement between the landowner and Hydro-Québec. Commercial sale of this biomass shall comply with regulations specified by joint plans approved by the Régie des marchés agricoles et alimentaires du Québec. This recovery does not necessarily replace the required disposal of all cutting residue.

Should granular material be required for filling, it shall be deposited as needed in the excavation. If granular material must be stored at the work site, the topsoil shall first be removed and the material placed on a membrane.

Traffic around the tower 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 support structures shall rise no more than 15 cm above the surrounding ground (enough to compensate for differential settling). Should inert soil and topsoil be mixed despite efforts to prevent it, the first 30 cm of soil shall be replaced by topsoil from an area approved by Hydro-Québec and measures shall be taken to restore fertility. The same applies should gravel be spread accidentally.

Precautions shall be taken to ensure that sediment pumped out of excavations does not spread into waterways or neighboring ditches. Pumped water shall be spilled into ponds with filtering membranes and the sediment disposed of by truck or any other means authorized by Hydro-Québec (such as a separation pump) as it is filtered out.

Fences shall be built around unsupervised excavations. These fences shall be safe and suited 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 the surrounding area. The material gathered up shall be disposed of in compliance with environmental standards at an authorized site or a place approved by the two parties.

If leveling is required, the contractor shall first remove the topsoil and put it aside, then return it to the original site when the work is completed.

When excavation takes place in winter, the work area and storage sites must be cleared of snow before excavation begins. Likewise, the excavation and the fill material must be cleared of snow before backfilling.

3.4.4 Assembly and erection of support structures

Support structures shall be assembled in such a way as to cause as little disturbance as possible to crops and farming operations. The work area shall be kept to a minimum and clearly marked.

All metal debris shall be removed from the site. Hydro-Québec shall take necessary measures to ensure that no metal debris remains on the property, including use of a metal detector if need be.

3.4.5 Conductor unwinding

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

Hydro-Québec shall choose sites with the least agricultural value as unwinding areas. As little space as possible shall be used, and it shall be clearly marked.

Wire and other metal debris shall be picked up immediately.

Excavations for conductor anchoring shall be allowed to dry out. Fill material shall be compacted and topsoil restored to a depth of 30 cm at all anchor points.

3.4.6 Site restoration

As soon as possible after construction, Hydro-Québec shall take measures to restore disturbed land to its original condition.

The land shall first be levelled and ruts filled to obtain a level work surface.

On farmland, soil samples shall be taken post-construction from various places to measure the level of fertility. Recognized methods of soil sampling shall be used. Depending on the results, Hydro-Québec shall implement one or more of the following measures to promote quick restoration of crops:

- Work the land with a plow or a chisel to the depth desired by the landowner (maximum of 25 cm).
- Loosen the soil to the depth desired by the landowner (maximum of 15 cm), using techniques appropriate to the soil (disc harrow, rotary cultivator or toothed harrow).
- Run a chisel over the land to the depth desired by the landowner (maximum of 40 cm).
- Run a subsoiler[1] over the land to the desired depth, soil and underground drainage conditions permitting; after two growing seasons, the land shall be analyzed to ascertain whether its original productivity has been restored.
- Bury organic matter, manure or inorganic fertilizer to restore fertility, following the recommendations of an agronomist and the guides of the Centre de référence en agriculture et agroalimentaire du Québec (CRAAQ).
- Remove rocks up to 8 cm in diameter or until conditions are similar to the surrounding land.

All of these operations shall be carried out when the ground is in the best possible condition, and they may be repeated.

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

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1. A caterpillar tractor is best for this operation. The subsoiler shall be equipped with adjustable coulters for use in different types of soil and duck-foot shanks.

Hydro-Québec shall remove temporary structures and installations, such as fences, bridges and ditches, and restore the land and existing installations to their original condition.

On sites where disturbance of the soil due to construction may cause erosion, measures shall be taken to stabilize the affected areas. One or more of the following methods shall be used:

- Retaining embankments
- Diffusers
- Furrows or diversion ditches perpendicular to the slope to channel runoff into areas covered with vegetation
- Levelling and terracing
- Blankets, sandbags, mesh or gabions
- Any other measure deemed acceptable by an agronomist or a forest engineer (typical plans and specifications shall be provided for the most common situations)
- Drain inlets
- Stone wells
- Reseeding
- Mulch

Hydro-Québec shall have plans drawn up for specific cases.

When the work is completed, the Hydro-Québec representative and the landowner shall visit the right-of-way and the access roads to ensure that all debris has been removed and that the land has been restored to the landowner's satisfaction.

3.4.7 Revegetation of right-of-way

3.4.7.1 Description

Revegetation of a right-of-way is part of the work Hydro-Québec undertakes to restore a right-of-way after building a power line. This applies to land used for forestry operations as well as farmland.

The main reasons for cultivating a right-of-way are to allow the landowner to plant crops (revegetation of right-of-way for farming purposes) or to facilitate vegetation control and hence maintenance of the right-of-way (revegetation of right-of-way for non-farming purposes).

When a new right-of-way is located in woodlands or is adjacent to a field where farming or silvicultural operations are carried out, Hydro-Québec and the landowner shall assess the possibility of undertaking work that would allow cultivation of the right-of-way. The landowner may inform Hydro-Québec of his/her desire to cultivate the right-of-way when the easement option is signed.

Conditions for **revegetation of a right-of-way** are as follows:

- The landowner agrees to carry out the farming or silvicultural operations needed to maintain the crop for fifteen years. The soil of the right-of-way must be adequate for establishment and maintenance of the crop planted.
- Rockiness is not a restriction, but large rocks or rock outcroppings can sometimes make it impossible to work the soil in preparation for planting.
- Soil wetness can be a limiting factor: when the soil is too wet for cultivation, additional drainage will be required to route water into a natural or artificial drainage system that crosses or runs along the right-of-way.
- The right-of-way must not be located in any of the following sensitive environments:
  - Wetlands
  - Riparian zones (buffer strips)
  - Highly-erodible land
  - Areas where clearing methods Aps, B, B2 or C apply

In rights-of-way that meet these conditions, the scope of the work will depend on the use to which the land will be put, established in advance by the Hydro-Québec representative and the landowner. The work performed shall allow for one of the three following possibilities:

- Natural pasture
- Perennial pasture or energy farming
- Crops

3.4.7.2 Definitions

Revegetation of right-of-way for non-farming purposes

Hydro-Québec may revegetate portions of the right-of-way not reclaimed for farming to facilitate maintenance.

Revegetation of right-of-way for farming purposes

The right-of-way may be cultivated for three purposes depending on the potential of the soil:

- Natural pasture
- Perennial pasture or energy farming
- Crops

Natural pasture

This applies where the terrain is rugged, rocky or very wet (excluding peatland or very large, poorly-drained areas) and difficult to work.

Work to be done:

- Grubbing and removal of rocks (except in case of rock outcrops or very large rocks) using machinery equipped with a rake
- Burial of debris (stumps, stones, etc.) in a trench, covering the debris with a layer of soil 100 cm thick (to the extent possible)
- Levelling, taking care to direct surface water to the edge of the right-of-way; because of the nature of the terrain, hollows may remain that do not drain
- Clearing of stones more than 10 cm in diameter from the surface only
- Application of manure and broadcast seeding of a clover-timothy mix including oats as a companion crop

Perennial pasture or energy farming

This applies where the land is basically flat, without rock outcrops, but where there is still a considerable amount of stones on the surface and in the ground. This land will be used mainly for pasture over extended periods of time. The preparatory work shall not involve tilling operations.

Work to be done:

- Grubbing and removal of rocks (except in case of rock outcrops or very large rocks) using machinery equipped with a rake
- Burial of debris (stumps, stones, etc.) in a trench, covering the debris with a layer of soil 100 cm thick
- Levelling, taking care to direct surface water to the edge of the right-of-way
- Loosening of the first 8 cm of soil, removing stones
- Clearing of stones more than 8 cm in diameter from the surface only
- Application of manure and broadcast seeding of a clover-timothy mix including oats as a shelter crop

Crops

This applies where the land is basically flat, without rock outcrops and with few stones on the surface and in the ground. The land will mainly be used in rotation for pasture and an annual crop.

Work to be done:

- Grubbing and removal of rocks (except in case of rock outcrops or very large rocks) using machinery equipped with a rake
- Burial of debris (stumps, stones, etc.) in a trench, covering the debris with a layer of soil 100 cm thick
- Levelling, taking care to direct surface water to the edge of the right-of-way
- Loosening of the first 25 cm of soil, bringing stones to the surface
- Clearing of stones more than 8 cm in diameter from the surface only
- Application of manure and broadcast or drill seeding of a clover-timothy mix including oats as a companion crop

If land and soil conditions prove significantly different during the work from what was anticipated based on the first visit, Hydro-Québec and the UPA representative can re-evaluate the scope of the work to be carried out.

3.4.7.3 Site restoration decision-making process

When the clearing or construction work is completed, a Hydro-Québec representative, the landowner concerned and the UPARS or a representative of the concerned regional federation of the UPA shall meet to determine where restoration work might be possible.

In case of disagreement between the parties, Hydro-Québec shall offer the landowner a financial contribution equivalent to the value of Hydro-Québec's work on the project or the value of comparable work performed for other projects, the compensation being conditional on the landowner carrying out the work.

3.5 DISPUTE SETTLEMENT

In case of disagreement between the landowner and Hydro-Québec on mitigation measures, the dispute may, at the discretion of either party and at their cost, be handled as follows:

- Within three working days of the occurrence of the event in question, the party or parties shall describe the nature of the dispute in writing. This notice of dispute shall be sent to Hydro-Québec's regional office and to the concerned regional federation of the UPA.
- Each party may appoint a representative with authority to negotiate and settle the dispute. This person shall be named in the notice of dispute. It is understood that this person may not be a lawyer, nor may this person be the site supervisor or the UPARS if the dispute concerns either one directly or indirectly.
- Within three working days of receiving the notice of dispute, the parties or their representatives shall meet at a location of their choosing with or without a neutral third party to discuss possible ways of settling the dispute.
- The parties agree not to begin legal proceedings during the three working days mentioned above, with the exception of measures required to preserve their rights.
- Should this dispute settlement procedure fail, the parties may mandate a conciliator or arbitrator, or may take legal action.
- It is understood that this dispute settlement process shall not be used as a means of halting the work. However, the work shall be halted temporarily if the parties deem it necessary.
- The parties may put an end to this dispute settlement process when it is demonstrated that one of the parties is abusing it, in particular by the frequency of written notices or by acting in bad faith.

PART 4 | MAINTENANCE

Maintenance of the Transmission System

4.1 INTRODUCTION

Hydro-Québec performs visits, inspections and repairs to ensure the reliability of overhead power transmission lines. In addition, vegetation control is carried out regularly in rights-of-way that run through woodlands to ensure the safety and reliability of the grid.

This section of the Agreement describes the methods Hydro-Québec uses to ensure respect for private property when overhead-line maintenance and vegetation control are carried out in rights-of-way. Also included in this section are measures that allow secondary use of rights-of-way compatible with line operation.

4.2 MAINTENANCE OF TRANSMISSION LINES

4.2.1 Maintenance of overhead lines

Overhead-line maintenance includes line inspections as well as work of lesser scope than construction work on support structures, insulators, conductors and other components. The main activities are of two types:

- **Routine inspections**: Hydro-Québec crews visit rights-of-way at regular intervals to inspect transmission line components. The crews travel by helicopter or in light-duty vehicles (e.g., all-terrain vehicles or snowmobiles). Little equipment is required as the inspections generally consist of visual examination of components.
- **Repairs**: Routine inspections may show that repair or replacement of certain line components (insulators, conductors, spacers, support lattice, guys, etc.) is required. Crews travel to the site by helicopter or in light-duty vehicles. Parts are delivered by helicopter or by land (e.g., by light-duty vehicle or crawler tractor).

When major maintenance work similar in scope to construction work is required (restoration, renovation or rebuilding), the terms and conditions of Chapter 3 herein shall apply.

4.2.2 Maintenance of rights-of-way (vegetation control)

Right-of-way maintenance includes an array of activities related to exercise of the easement, soil stability and vegetation control. The purpose of these activities is to maintain electrical clearance around conductors, allow rapid and easy access for maintenance of line components, particularly in case of outage, and prevent damage to equipment in the event of forest fire.

Hydro-Québec uses different methods to control vegetation incompatible with system operation. Its choices are based on criteria pertaining to the environment, efficiency, safety, health and costs. In all instances, Hydro-Québec takes into account the natural environment and the use to which the right-of-way is put. Hydro-Québec applies the principles of "integrated vegetation management," that is, using the right method in the right place at the right time.

Hydro-Québec uses three methods, alone or in combination, to control vegetation in rights-of-way:

- Selective cutting, carried out with hand-held equipment (chain saw or brush cutter) or motorized equipment (wheeled brush cutters) or by clipping or mowing
- Selective application of herbicides (chemicals that control certain plant species) to leaves or to the cut surface of stumps (cutting followed by stump treatment)
- Land development or cultivation

Hydro-Québec shall ensure that vegetation control crews be comprised of qualified, specialized forestry workers who have technical training and environmental knowledge. Hydro-Québec shall monitor the work and ensure follow-up to ascertain the success of the control measures.

Before undertaking vegetation control work, Hydro-Québec shall conduct an environmental assessment to pinpoint sensitive environmental elements in the rights-of-ways covered by the annual vegetation control program. A sensitive element is an entity that must be protected when control work takes place nearby, e.g., a dwelling, a stream, a drinking water intake, cropland, a garden, a lake, a fish farm, an orchard or a wildlife habitat. Depending on the sensitive elements identified, Hydro-Québec shall implement mitigation measures to protect and limit impacts on them.

In carrying out routine vegetation control, Hydro-Québec shall take certified organic cropland into account as well as cropland in the process of becoming certified organic. If informed of the presence of such cropland close to a right-of-way, Hydro-Québec shall ensure maintenance of the applicable buffer zone in which application of herbicides is prohibited.

If necessary, Hydro-Québec shall make selective use of herbicides. Vegetation control shall comply with the *Pesticides Management Code*. In addition, as specified in the *Pest Control Products Act*, Hydro-Québec shall use only chemicals approved by the Pest Management Regulatory Agency (PMRA).

When making plans for vegetation control activities, Hydro-Québec shall notify concerned landowners and the concerned regional federations of the UPA at least two weeks in advance, mentioning the type of work that will be performed and the approximate period during which it will be carried out.

4.2.3 Maintenance of vegetation by landowner

Hydro-Québec may entrust to the landowner the mechanical maintenance of vegetation that must be cut as part of its vegetation control program. Before carrying out the work, Hydro-Québec shall inform the landowner in writing of what needs to be done on his/her property to ensure reliability of the transmission system. The landowner may then notify Hydro-Québec of his/her wish to carry out the work himself/herself. Hydro-Québec shall determine if the work planned can be carried out safely by the landowner. The landowner's remuneration shall be equivalent to the average price paid by Hydro-Québec for such work.

4.3 MITIGATION MEASURES RELATED TO TRANSMISSION LINE MAINTENANCE

4.3.1 General measures

The following general measures make it possible to mitigate the impact of line maintenance on farms and in woodlands:

- Hydro-Québec shall obtain the permission of the owner of property off the right-of-way that Hydro-Québec wishes to use for purposes of line maintenance, in particular, farm or access roads.
- Hydro-Québec shall draft a list of sensitive elements in the area where the work is to take place so that measures can be taken to protect them.
- Hydro-Québec shall designate resource people in its regional offices to provide farmers and forestry producers with satisfactory technical information on line maintenance.
- Hydro-Québec alone shall be responsible for the implementation of mitigation measures related to line maintenance on farms and in woodlands.

During maintenance work, Hydro-Québec shall apply mitigation measures related to use of farm roads, access roads, fences and gates.

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

4.3.2 Special measures

4.3.2.1 Farm and access roads

Hydro-Québec shall obtain permission from the landowner before using or building an access road off the right-of-way.

If a new access road must be built, or if there is a risk that machinery used might damage an existing farm or access road, Hydro-Québec shall come to an agreement with the landowner on conditions for construction or use of the access road and shall include these in a written agreement with the landowner.

When the maintenance work is completed, the roads shall be restored to their original condition or better using material of the same size and type as the material used in the roads. One year (one freeze-thaw cycle) under normal use conditions must elapse before Hydro-Québec's responsibility for restoring the roads lapses.

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

4.3.2.2 Fences and gates

After reaching an agreement with the landowner, Hydro-Québec shall install gates or temporary fences inside the right-of-way where needed to protect crops, livestock and property outside the right-of-way.

Fences inside the right-of-way that run along public access roads shall have rigid gates to prohibit access to the right-of-way, except during maintenance.

In case of existing electric fences, Hydro-Québec may do one of the following:

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

Gates shall be installed as follows:

- Shore up posts on either side of the opening to maintain mechanical tension in adjacent spans.
- Manually cut wire and, if adequate, use it to build the gate; if not, recover the cut wire and use material of equivalent or higher quality to build the gate.

Hydro-Québec shall ensure that the contractor responsible for maintenance maintains the gates in good condition and keeps them closed at all times, as instructed by the Hydro-Québec representative. In addition, any fence or temporary gate shall be visible at all times to anyone with access to the right-of-way.

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 is completed, temporary gates shall be removed, barring agreement otherwise with the landowner.

If stone or pole fences must be taken down, the material removed shall be stored and used to rebuild the fence when the maintenance work is completed.

Hydro-Québec shall maintain appropriate protection systems for livestock. Any fence needed to keep out particular kinds of animals shall be described in specific mitigation measures, e.g., fences running along the right-of-way or allowing animals to cross it.

4.3.2.3 Traffic on cultivated right-of-way

Hydro-Québec may have to travel in a cultivated right-of-way. In such cases, Hydro-Québec shall notify the landowner in advance in order to minimize crop losses.

When the maintenance work is completed, Hydro-Québec shall restore the land to its original condition and compensate the landowner for any crop losses.

4.3.3 Emergencies

The measures described in sections 4.3.1 and 4.3.2 above may be disregarded in an emergency (e.g., in case of outage due to a storm, freezing rain or major equipment failure).

Should property be damaged or crops lost as a result of emergency work, Hydro-Québec shall compensate the landowner as provided for in this Agreement.

4.4 SECONDARY USE OF RIGHTS-OF-WAY BY LANDOWNERS

Under certain conditions, Hydro-Québec may authorize secondary use of transmission line rights-of-way at the request of a landowner. Numerous uses are in fact compatible with the presence of lines, in particular, those described below.

4.4.1 Tree and shrub planting

A landowner may use a power line right-of-way to grow certain kinds of trees and shrubs (e.g., Christmas trees, fruit trees, vines, willows and berries), provided mature height criteria are respected. Permission from Hydro-Québec is required before planting begins.

Hydro-Québec undertakes not to carry out vegetation control in planted sections of the right-of-way, provided the landowner fulfills his/her obligations.

4.4.2 Revegetation of rights-of-way

Hydro-Québec encourages revegetation of rights-of-way. Environmental conditions permitting, Hydro-Québec shall contribute financially to the removal of stumps and waste wood from the right-of-way. Hydro-Québec shall contribute an amount equivalent to the cost of two cycles of maintenance of the area cultivated.

The following conditions must be met:

- The right-of-way is located in woodlands or is adjacent to a field where farming or silvicultural operations are carried out and the landowner agrees to maintain the crop for fifteen years.
- The landowner agrees to carry out the farming or silvicultural operations needed to maintain the crop for fifteen years. The soil of the right-of-way must be adequate for establishment and maintenance of the crop planted.
- Rockiness is not a restriction, but large rocks or rock outcroppings can sometimes make it impossible to work the soil in preparation for planting.
- Soil wetness can be a limiting factor: when the soil is too wet for cultivation, additional drainage will be required to route water into a natural or artificial drainage system that crosses or runs along the right-of-way.
- The right-of-way must not be located in any of the following sensitive environments:
  - Wetlands
  - Riparian zones (buffer strips)
  - Highly-erodible land
  - Areas where clearing methods Aps, B, B2 or C apply

PART 5 | COMPENSATION

Methods of Compensation

5.1 INTRODUCTION

This section of the Agreement deals with financial compensation that Hydro-Québec shall pay owners of property needed for construction of substations or transmission lines with a rated voltage of 44 kV or more. It covers financial compensation related to the following:

- Acquisition of rights
- Construction work

This compensation also applies, with necessary adaptations, to major rehabilitation, renovation and reconstruction projects requiring replacement of one line by another and to permanent dismantling of a power line or a substation subject to an easement.

The rules governing compensation with respect to farms and woodlands apply to land used for farming or forestry operations whether or not it is in an agricultural zone under the *Act respecting the preservation of agricultural land and agricultural activities*.

Any owner of farmland or woodlands who grants Hydro-Québec an easement or purchase option shall, in exchange for financial compensation, allow Hydro-Québec, as soon as it exercises said option, to enter the right-of-way in question, install its equipment there and build and install any power line, substation or other electric power facility for the purposes and in the manner stipulated in the said option. Hydro-Québec and the landowner shall comply with all obligations set forth in the option and the deed of easement or sale.

The compensation described in this part of the Agreement is offered to landowners by mutual agreement.

5.2 FINANCIAL COMPENSATION RELATED TO ACQUISITION OF RIGHTS (C_g)

The following formula lists the elements to be included when calculating compensation for access to the right-of-way and acquisition of easements required for a power-line construction project (some of these elements also pertain to construction of a substation):

$$C_g = C_1 + C_2 + C_3 + C_4 + C_5 + C_6 + C_7 + C_8 + C_9 + C_{10}$$

where

- C_g Total financial compensation to be paid to the landowner for access to the right-of-way and acquisition of easement
- C_1 Compensation for meetings and gathering of information
- C_2 Compensation for technical field surveys
- C_3 Compensation for access to the right-of-way
- C_4 Compensation for easement (land)
- C_5 Compensation related to woodland
- C_6 Compensation for clearing easement
- C_7 Compensation for presence of support structures
- C_8 Compensation for signing deed of easement before notary
- C_9 Compensation for temporary easement
- C_{10} Other compensation related to acquisition of rights

5.2.1 Compensation for meetings and gathering of information (C_1)

A lump sum of $450[1] shall be paid to the landowner at the first meeting with the Hydro-Québec easement officer at the landowner's home on signing an agreement on meetings for gathering of information.

The purpose of the meetings is to gather the main information needed for calculation of the compensation and to find out about the presence of sensitive elements on the property. Hydro-Québec representatives continue to gather information following the meetings by undertaking land, environmental, agronomic and forest surveys as required.

In some cases, trees must be cut to perform the land surveys. The $450 in compensation does not cover the value of the trees that must be cut; this is included in the compensation related to acquisition of easement (see section 5.2.4).

1. This lump sum amount is adjusted according to the Québec Consumer Price Index (CPI) every two years (reference year: January 2012).

5.2.2 Compensation for technical field surveys (C_2)

A lump sum of $450[1] shall be paid to the landowner when, prior to construction of a power line or substation, Hydro-Québec requests that an agreement be signed to carry out technical, geotechnical and archeological work (other than land surveys) that requires use of vehicles, machinery or equipment on the landowner's land. This compensation covers access to work sites.

In some cases, trees must be cut to carry out the technical surveys. The $450 in compensation does not cover the value of the trees that must be cut; this is included in the compensation related to acquisition of easement (see section 5.2.4).

5.2.3 Compensation for access to right-of-way (C_3)

Compensation for access to the right-of-way is paid to the landowner for access to the right-of-way and signing of the easement option. The amount of the compensation is based on the market value of the land covered by the easement.

Total compensation for access to the right-of-way is determined using the following formula:

$$C_3 = [\, V_a \left(S_a + \frac{2N_a}{5}\right) + V_f \times S_f \,] \times 85\%$$

where

- C_3 is the amount of compensation
- V_a is the market value of a hectare of farmland (minimum of $6,000 per hectare[2])
- V_f is the market value of a hectare of woodland (minimum of $3,000 per hectare[2])
- N_a is the number of support structures on cultivated land
- S_a is the number of hectares of farmland in the new right-of-way
- S_f is the number of hectares of woodland in the new right-of-way and the clearing easement

If the new line is adjacent to an existing line, then compensation C3 is increased by 29%.

Total compensation for access to the right-of-way may not be less than $1,000.[1]

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1. This lump sum amount is adjusted according to the Québec CPI every two years (reference year: January 2012).
2. This minimum value shall be adjusted every two years, starting in 2018, using a method that alternatively integrates the Québec CPI and the average increase in land value (reference year: January 2012).

5.2.4 Compensation related to acquisition of easement (C_4 to C_8)

When an agreement is reached between Hydro-Québec and the landowner, the latter signs an easement option. This easement option is a privately signed legal document whereby the landowner cedes to Hydro-Québec the irrevocable option to acquire a real, perpetual easement for construction of an electric power line, culminating in the signing of a deed of easement before a notary.

The easement is composed of two separate elements (see Figure 1)

- An easement for the electric power line, called a "line easement"
- An easement for the cutting of trees, called a "clearing easement"

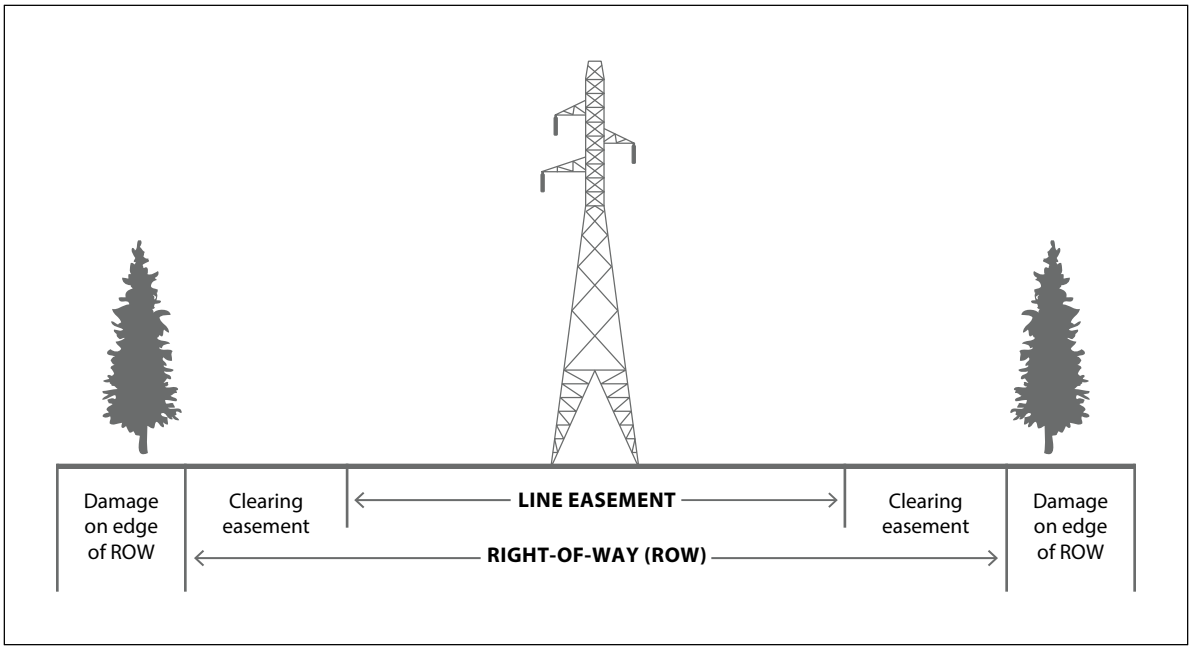
The line easement allows Hydro-Québec to do the following:

- Install, operate, maintain, repair and replace an electric power line.
- Cut and maintain vegetation.
- Move about on foot or by vehicle.
- Prohibit construction in the right-of-way.

The clearing easement allows Hydro-Québec to do the following:

- Cut and maintain vegetation.
- Move about on foot or by vehicle.

Figure 1. TYPICAL ELECTRIC POWER LINE RIGHT-OF-WAY



Barring reasonable grounds for refusal, Hydro-Québec shall agree in writing to new easements or new rights encumbering the line or clearing easement that are granted by the landowner to a third party.

Hydro-Québec shall pay compensation for acquisition of easement (C_4 to C_8) when the deed of easement is signed before the notary. Said compensation may not be less than $500.[1]

The compensation for acquisition of easement is composed of the following elements:

- Compensation for easement (land) (C_4)
- Compensation related to woodland (C_5)
    - Natural woodlands and plantations
        - Standing timber
        - Loss of future harvests
        - Damage on the edge of the right-of-way
    - Maple stands
        - Loss of current and future harvests
        - Damage on the edge of the right-of-way
- Compensation for clearing easement (C_6)
- Compensation for presence of support structures (C_7)
- Compensation for signing deed of easement before notary (C_8)

5.2.4.1 Compensation for easement (land) (C_4)

5.2.4.1.1 On farms

Compensation paid for all farmland subject to an easement shall be equivalent to 150% of the market value of the land (50% is added to the market value in consideration of the small size of the piece of land concerned).

5.2.4.1.2 In woodlands

The compensation paid for all woodland subject to an easement shall be equivalent to 150% of the market value of the bare forest land (50% is added to the market value in consideration of the small size of the piece of land concerned).

1. This lump sum amount is adjusted according to the Québec CPI every two years (reference year: January 2012).

5.2.4.2 Compensation related to woodland (C_5)

5.2.4.2.1 Compensation related to natural woodland and plantations

Compensation for loss of timber in a private forest is based on the value of standing timber and future harvests as well as damage on the edge of the right-of-way, said value established according to generally accepted methods and principles of forestry assessment.

The main criteria for assessing woodland are as follows:

- The particular characteristics of the forest concerned—its composition, distribution and development and the volume of wood it holds
- The local and regional value of forest products based on size and quality requirements as well as the use to which the products are put; tables or lists of prices used for each region of Québec are published several times a year by forestry producers' unions across Québec
- Timber harvesting costs, set at 50% of roadside price for the purposes of this agreement

5.2.4.2.1.1 Standing timber

Compensation for standing timber is based on volume as per the forest inventory.

To this end, timber stands shall first be identified, then the volume of merchantable timber shall be assessed using the "continuous strip" method or any other recognized method.

In case of plantations, field inventories shall be used to determine standing volume and site index.

In case of stands or plantations that have not yet reached maturity, the expectation value method shall be used if it is more advantageous for the landowner than calculating present value.

5.2.4.2.1.2 Loss of future harvests

Compensation granted for future harvests compromised by the presence of the power line shall be equivalent to the current value of future periodic harvests (i.e., a harvest every 40 years) in perpetuity. This value is based on the yield tables used by the regional agency for private forest development, discounted at 3.5% on the assumption that the harvest starts over following construction of the line. Benchmark volumes for private forests are included in the appendix hereto. These shall remain effective until the establishment of new private-forest yield tables officially recognized by the Ministère des Forêts, de la Faune et des Parcs (MFFP), the Fédération des producteurs forestiers du Québec and the parties to this agreement.

In case of forest stands that have not yet reached maturity, regular future harvests are discounted by reducing the first harvest period to take into account the number of years remaining until the stand is 40 years old.

As for plantations, compensation for future harvests shall be established using the Bolghari and Bertrand (1984), Prégent (2010) or other yield tables used by the regional agency for private forest development. The most appropriate yield table given the location of the tree planting shall be used.

In case of plantations that have not reached maturity, regular future harvests are discounted by reducing the first harvest period to take into account the number of years remaining until the tree planting has reached the age of financial maturity.

5.2.4.2.1.3 Damage on the edge of the right-of-way

In case of damage on the edge of the right-of-way, Hydro-Québec shall pay compensation for standing timber on a strip of land 5m wide on either side of the right-of-way, the compensation is calculated in the same way as compensation for standing timber inside the right-of-way. This compensation entitles Hydro-Québec to fell all trees in these strips of land that might interfere with operation of the power line without paying any additional compensation.

If construction of the power line causes damage on the edge of the right-of-way that exceeds the value of the compensation mentioned in the preceding paragraph, an assessment shall be carried out and compensation for the excess damage shall be paid to the landowner.

In the event of damage on the edge of the right-of-way to property not subject to the easement for the new line, Hydro-Québec shall compensate the concerned landowner for the damage, provided that Hydro-Québec obtains the right to cut all trees within the 5-m strip that might hinder operation of the power line. This clearing right shall be covered by a signed agreement.

5.2.4.2.2 Compensation related to maple stands

In case of maple stands (operational, not harvested or potential), compensation shall be determined using one of the following methods:

- Method 1: The maple stand shall be evaluated as if it were natural woodland, applying all applicable rules (see section 5.2.4.2.1).
- Method 2: The maple stand shall be evaluated based on its maple syrup production, using the income approach (described below) with necessary adjustments depending on the type of maple stand.

The compensation paid is the higher of the two results.

5.2.4.2.2.1 Current and future production losses (method 2)

The value of an **operational maple stand** shall be established using recognized methods assuming a minimum 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 from the following:

- Average annual maple syrup harvest based on company data (if valid and available) or regional data (e.g., Groupe AGÉCO) for the last five years
- Average adjusted price over the past five years
- Gross income
- Variable operating expenses based on economic reference material specific to maple stands from the Centre de référence en agriculture et agroalimentaire du Québec (CRAAQ) (fixed expenses, such as overhead and depreciation, are not used in calculating net income)

Compensation for maple stands **that are not harvested** shall be established using the income approach and CRAAQ data. Maple stands that are designated as not harvested must offer a tapping potential of at least 150 taps per hectare at the time of the assessment. Net income is calculated in the same way as net income for an operational maple stand, except that fixed expenses are included when calculating net income of maple stands that are not harvested.

Compensation for **potential maple stands** shall be established using the income approach and CRAAQ data. To be designated a "potential maple stand," the maple stand must be undergoing regeneration and have a density of 150 maple trees per hectare. Net income in perpetuity is considered, discounted to take into account the number of years that remain until a diameter of 20 cm is achieved. Net income is calculated using the same values used for maple stands that are not harvested.

For **all types of maple stands,** value at the tap is based on the status of the maple stand as a whole. In addition, other income generated by the maple stand (e.g., sale of wood from maple stand management operations) shall be considered in the evaluation.

5.2.4.2.2.2 Damage on the edge of the right-of-way (method 2)

In case of damage on the edge of the right-of-way in a maple stand evaluated using method 2, Hydro-Québec shall pay compensation equivalent to 100% of the value of the harvest loss on a 12.5 m strip on either side of the right-of-way. This compensation entitles Hydro-Québec to cut, without additional compensation, all trees within this strip that might hinder power line operation.

If construction of the line causes damage on the edge of the right-of-way that exceeds the value of the compensation stipulated in the preceding paragraph, an assessment will be carried out and compensation for the excess damage shall be paid to the landowner.

5.2.4.3 Compensation for clearing easement (C_6)

The methods described in sections 5.2.4.1.2 and 5.2.4.2 shall also be used to calculate compensation for a clearing easement in woodlands.

5.2.4.4 Compensation for presence of support structures (C_7)

5.2.4.4.1 On farms

To calculate compensation for encumbrance of farmland by structure supports, Hydro-Québec uses a method developed exclusively for evaluation of this type of damage.[1] This method takes the following into account:

- Arable land lost
- Additional costs of detours
- Cost of maintaining uncultivated space

The compensation can be paid in two ways:

- As a single payment calculated using a 3.5% capitalization rate
- As 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 annuity is calculated by multiplying the amount of the single payment by a rate equal to the interest rate on a 12-month term deposit at the National Bank of Canada. This rate is revised once a year and reflects the interest rate in effect on the last Friday in January. The annuity is transferable to a future buyer of the land in question. The annual-payment option may be converted into a single payment at the end of any five-year period or when ownership of the property is transferred.

5.2.4.4.2 In woodland

The owner of woodlands shall receive, as compensation for the presence of support structures, $150[2] per support point and anchor point, to a maximum of $750[2] per support structure.

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1. J.-M. Fortin and C. Vigneault. Impact of electric towers on farm machinery operations. *American Society of Agricultural Engineers* 81:3503, December 1981.

   J.-M. Fortin and C. Vigneault. Time and land losses with electric towers in agricultural fields. *Canadian Agricultural Engineering* 24:103-108, February 1982.

2. This lump sum amount is adjusted according to the Québec CPI every two years (reference year: January 2012).

5.2.4.4.3 Addition or replacement of support structures

Compensation in case of addition of a support structure is calculated using the methods described in sections 5.2.4.4.1 and 5.2.4.4.2.

Compensation in case of replacement of a support structure (change of location or dimensions) is calculated based on the difference between the old situation and the new, but the total compensation may not be less than $500.[1]

5.2.4.5 Compensation for signing deed of easement before notary (C_8)

Additional compensation shall be paid to a landowner who signs an agreement with Hydro-Québec as provided for herein. This amount is added to the amounts paid for acquiring the easement and paid before a notary. The choice of notary shall be at Hydro-Québec's discretion.

The following formula is used to determine compensation for signing the deed of easement before a notary:

$$C_8 = P \times (S_a + S_f)$$

where

- C_8 is the amount of compensation
- P is equal to $1,443[1]
- S_a is the number of hectares of farmland in the new right-of-way
- S_f is the number of hectares of woodland in the new right-of-way and the clearing easement

5.2.5 Payment of compensation

Table 1 summarizes the methods of payment of compensation.

At the first meeting regarding acquisition of easement, Hydro-Québec shall give the landowner details on the compensation for elements C_3 to C_{10}.

1. This lump sum amount is adjusted according to the Québec CPI every two years (reference year: January 2012).

Table 1. METHODS OF COMPENSATION PAYMENT

Compensation		Method of payment	Subsequent activities
Purpose	**Designation**		
Meetings and gathering of information	C_1	Cheque sent by mail following signing of agreement	Land access for the following purposes: • Land surveying • Forest, agronomic and environmental inventories
Technical field surveys	C_2	Cheque sent by mail following signing of agreement	Land access for the following purposes: • Geotechnical studies • Archeological studies • Agricultural surveys
Access to right-of-way	C_3	Cheque sent by mail following signing of agreement	Clearing operations Construction work • Support structure foundations • Erection of support structures • Conductor unwinding Signing of deed of easement
Acquisition of easement	C_4, C_5, C_6, C_7, C_8 and C_{10}	Cheque delivered at the notary's when deed of easement is signed	
Acquisition of temporary easement	C_9	Cheque sent by mail following signing of agreement	Clearing operations (if required) Construction work

5.2.6 Compensation for temporary easement (C_9)

A temporary easement is an easement of less than five years in duration that is exercised outside an existing right-of-way. If in the project planning stage Hydro-Québec foresees using an easement for five years or more, then Hydro-Québec must compensate the landowner or landowners affected for acquisition of a permanent easement.

A temporary easement agreement, whether or not it is recorded in the land register, must include provision for reassignment at the end of the stipulated period and at Hydro-Québec's expense. If the removal of temporary structures occurs after the date stipulated in the easement agreement, Hydro-Québec shall pay compensation equivalent to 5% of the market value of the area affected per month of delay.

If a temporary easement must be converted into a permanent easement, the landowner shall receive full compensation for the permanent easement above and beyond the amounts already paid for the temporary easement.

The methods of calculating compensation for a temporary easement are indicated below.

5.2.6.1 Compensation for access to right-of-way

Compensation for access to the right-of-way and signing of the temporary easement option shall not be less than $750.[1] The amount of such compensation is equivalent to 20% of the value of P according to the following formula:

$$P = V_a (S_a) + V_f (S_f) \times 85\%$$

where

- P is the amount of compensation
- V_a is the market value of a hectare of farmland (minimum of $6,000 per hectare[2])
- V_f is the market value of a hectare of woodland (minimum of $3,000 per hectare[2])
- S_a is the number of hectares of farmland in the new right-of-way
- S_f is the number of hectares of woodland in the new right-of-way and the clearing easement

5.2.6.2 Compensation for land

Compensation paid for any land (farmland or woodland) subject to a temporary easement shall be equivalent to 20% per year of the compensation for a permanent easement (see section 5.2.4.1).

5.2.6.3 Compensation for standing timber

The owner of the woodland shall receive compensation for the value of the standing timber calculated using the methods described in section 5.2.4.2.1.1.

5.2.6.4 Compensation for presence of temporary support structures

On farmland, the compensation is equivalent to 20% per year of the amount obtained using the calculation method for permanent support structures (see section 5.2.4.4.1).

In woodlands, the compensation is equivalent to 20% per year of the amount provided for in section 5.2.4.4.2.

5.2.6.5 Other compensation related to a temporary line

The provisions respecting payments of $450 for meetings and gathering information (see section 5.2.1) and for technical field surveys (see section 5.2.2) apply to landowners affected by a temporary line, except when the land is also affected by construction of a permanent line in the same project.

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1. This lump sum amount is adjusted according to the Québec CPI every two years (reference year: January 2012).
2. This minimum value shall be adjusted every two years, starting in 2018, using a method that alternatively integrates the Québec CPI and the average increase in land value (reference year: January 2012).

5.2.7 Other compensation related to acquisition of rights (C_{10})

5.2.7.1 Compensation for professional fees

Professional fees incurred by the landowner shall be reimbursed subject to prior agreement with Hydro-Québec.

5.2.7.2 Compensation pertaining to a forest management plan

5.2.7.2.1 Protection of silvicultural investments

If woodland subject to an easement is included in a recognized forest management plan, Hydro-Québec shall take the following into account:

- Steps taken by the landowner
- Investments made in connection with the forest management plan
- Work completed
- Additional yield potential
- Possible penalties related to destruction of forestry developments funded by regional agencies for private forest development
- Status of implementation of the management plan

5.2.7.2.2 Loss of legal status as a forest producer

If after the easement comes into effect the forest property no longer meets the requirements for obtaining forest producer status under section 130 of the *Sustainable Forest Development Act,* Hydro-Québec shall compensate the landowner for loss of the benefits of said status.

5.2.7.2.3 Loss of potential subsidies

To compensate for loss of potential income from subsidies under the *Programme d'aide à la mise en valeur des forêts privées* (private forest development assistance program), Hydro-Québec shall pay $100[1] per hectare to the landowner with a recognized, valid forest management plan.

5.2.7.3 Interest payments

Interest on compensation owing to a landowner for acquisition of easement (elements C_4 to C_{10}) shall accrue beginning 90 days after the date of signing of the easement option. Hydro-Québec shall pay interest at the National Bank of Canada prime lending rate plus 1%. The rate shall be revised annually and shall correspond to the rate in effect on the last Friday of January.

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1. This lump sum amount is adjusted according to the Québec CPI every two years (reference year: January 2012).

5.2.7.4 Abandonment of right-of-way

If Hydro-Québec ceases to use a right-of-way and relinquishes the associated easements, then Hydro-Québec shall take the necessary measures to terminate the easements and shall assume related costs (for quit claims, publication of notices, etc.).

5.2.7.5 Compensation for purchase of land for substations or permanent access roads

Compensation for the purchase of land for substations or permanent access roads shall be established according to one of the following methods:

- Method 1: The land shall be appraised as in the case of a line easement, complying with all applicable rules (see sections 5.2.1 to 5.2.4 and 5.2.7).
- Method 2: The land shall be appraised using the direct comparison approach (industrial land), with all necessary adjustments (pertaining to size, location, subsidies, etc.) except the following:
  - No adjustment shall be made because the land is or is not located in an agricultural zone under the *Act respecting the preservation of agricultural land and agricultural activities*.
  - Sales of industrial land used for comparison purposes may be in the same municipality as the land appraised or in adjacent municipalities. Sales in municipalities that are not adjacent may also be considered if submitted by either party, provided there is some degree of comparability with the municipality where the land appraised is located.

The compensation shall be based on the higher of the two results.

5.3 FINANCIAL COMPENSATION RELATED TO CONSTRUCTION WORK (C_t)

The following formula summarizes the elements to be included when calculating compensation for damage and inconvenience related to a power line or substation construction project:

$$C_t = C_{11} + C_{12} + C_{13} + C_{14} + C_{15}$$

where

- C_t is the total financial compensation to be paid to the landowner for damages and inconvenience related to construction work
- C_{11} is compensation for temporary work space
- C_{12} is compensation for the landowner's time spent on certain tasks and assessing construction damage
- C_{13} is compensation for temporary damage
- C_{14} is compensation for inconvenience caused by construction work
- C_{15} is compensation for other elements

Hydro-Québec shall pay this compensation when the work is completed, after signing an agreement with the landowner.

5.3.1 Compensation for temporary work space (C_{11})

This compensation is for temporary use of a portion of land off the right-of-way (excluding access roads) for storing material or carrying out work related to power line or substation construction.

During the first year, the compensation paid shall be equivalent to 50% of the market value of the land concerned. After one year, the compensation shall be 5% per month. In woodlands, the market value shall be that of the bare forest land. The woodland owner shall also receive the value of felled standing timber, calculated using the method of evaluation described in section 5.2.4.2.1.1. Total compensation may not be less than $750.[1]

This compensation shall also be paid to the owner of any land used for any purpose whatsoever during the stages or studies preceding construction of the line or substation, even if the land is not affected by actual construction work.

Compensation for time spent by the owner of the farm or woodland (C_{12}), for temporary damage (C_{13}), for inconvenience related to construction work (C_{14}) and for other elements (C_{15}) shall be paid in addition to compensation for temporary work space, as specified in sections 5.3.2 to 5.3.5.

1. The lump sum amount is adjusted according to the Québec CPI every two years (reference year: January 2012).

5.3.2 Compensation for landowner's time on certain tasks and assessing construction damage (C_{12})

Hydro-Québec shall pay the owner of a farm or woodland compensation for time spent assessing construction damage, understanding the content of this agreement, visiting sites post-construction and settling construction damages. Additional time for special cases may be compensated under certain circumstances.

Table 2 shows time allocated for these activities.

Table 2. COMPENSATED TIME SPENT BY LANDOWNER ON DIFFERENT TASKS

Task	Time
Study of content of this agreement, post-construction visit and assessment and settlement of damages	17 hours
Inspection of support structures on farmland	4 hours per support structure
Special cases (e.g., construction in a maple stand or major erosion)	To be evaluated by the work supervisor or his/her representative

The hourly rate used by Hydro-Québec shall be according to a scale of fees recognized by the UPA for an agricultural producer. This rate shall be adjusted annually on the last Friday of January.

Permission of the work supervisor or his/her representative shall be obtained for all site visits by the landowner. The landowner shall comply with safety rules in effect on the work site.

5.3.3 Compensation for temporary damage (C_{13})

5.3.3.1 Crop losses on farmland

Compensation for crop losses shall be calculated by multiplying the quantity of each crop lost by the higher of the following: the regional market price or the price established by the Financière agricole du Québec (FADQ). Minimum compensation is $75.[1]

Where crop losses caused by construction work occur in the years following commissioning of the line or substation, a Hydro-Québec representative shall assess the losses and pay compensation calculated on the same general basis. Should crop losses persist despite regular farming operations carried out by the landowner (agricultural production), Hydro-Québec shall identify the cause in collaboration with the landowner and endeavor to find a permanent solution to restore the land's original productivity as quickly as possible.

In case of loss of organic crops, the compensation shall also take into account the anticipated delay before cultivation resumes under the provisions of the applicable certification program.

5.3.3.2 Wood used during construction

Hydro-Québec shall compensate the landowner for timber felled in the line right-of-way (see section 5.2.4.2.1.1). The felled timber shall be left for the landowner to recover as it becomes available. However, if Hydro-Québec, its contractors or representatives must use some of this wood, the value of the amount used will be evaluated based on local and regional roadside price and paid in addition to the compensation provided for in section 5.2.4.2.1.1.

5.3.4 Compensation for inconvenience caused by construction (C_{14})

This compensation covers losses and accidental or other damage sustained by the landowner inside or off the right-of-way as a result of work carried out by Hydro-Québec or contractors for purposes of line or substation construction.

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

1. The lump sum amount is adjusted according to the Québec CPI every two years (reference year: January 2012).

5.3.5 Compensation for other elements (C_{15})

5.3.5.1 Interest payments

Hydro-Québec shall pay interest on any amount owing to a landowner at the National Bank of Canada prime lending rate plus 1%. The rate shall be revised annually and shall correspond to the rate in effect on the last Friday of January.

Interest payable shall be calculated as follows:

- For crop losses (farmland) covered by element C_6 (see section 5.3.3), interest shall start to accrue 31 days after the date on which the crop is normally shipped to market for sale
- For damage covered by element C_{14} (see section 5.3.4), interest shall start to accrue 31 days after the date Hydro-Québec receives a notice to this effect

5.3.5.2 Work carried out by landowner

Hydro-Québec may entrust to the landowner the initial clearing, the mechanical vegetation control, the preparation for cultivation or the site restoration. The landowner's remuneration shall be equivalent to the price Hydro-Québec pays for such work.

5.4 DISPUTE SETTLEMENT

In case of disagreement between Hydro-Québec and the landowner on the compensation offered to acquire an easement or on the assessment of damage caused by construction, the dispute may, at the discretion of either party and at their cost, be handled as follows:

- The party or parties shall describe the nature of the dispute in writing. This notice of dispute shall be sent to Hydro-Québec's regional office and to the concerned regional federation of the UPA.
- Each party may appoint a representative with authority to negotiate and settle the dispute. This person shall be named in the notice of dispute. It is understood that this person may not be a lawyer, nor may this person be the site supervisor or the UPARS if the dispute concerns either one directly or indirectly.
- Within 10 working days of receiving the notice of dispute, the parties or their representatives shall meet at a location of their choosing with or without a neutral third party to discuss possible ways of settling the dispute.
- The parties agree not to begin legal proceedings during the ten working days mentioned above, with the exception of measures required to preserve their rights.

- Should this dispute settlement procedure fail, the parties may mandate a conciliator or arbitrator, or may take legal action.
- It is understood that this dispute settlement process shall not be used as a means of halting the work. However, the work shall be halted temporarily if the parties deem it necessary.
- The parties may put an end to this dispute settlement process when it is demonstrated that one of the parties is abusing it, in particular by the frequency of written notices or by acting in bad faith.

APPENDIX 1

Rendement de la forêt privée pour les récoltes à venir

VOLUME À 40 ANS, EN MÈTRES CUBES SOLIDES BRUTS PAR HECTARE

Région	Type de forêt privée[a]										
	SE	SS	CR	FIRR	ERRR	ERRF	FIRF	ER	ERFT	ERFI	FI
La Pocatière	131,7	119,6	141,1	125,0	157,3	129,0	125,0	114,3	145,1	141,1	122,3
Nicolet	126,3	134,4	133,1	123,7	146,5	127,7	118,3	99,5	150,5	111,5	72,6
Estrie	127,6	133,1	135,8	123,7	150,5	118,3	126,3	122,3	145,1	104,8	94,1
Beauce	125,0	130,3	134,4	119,6	162,6	127,7	118,3	129,0	146,5	115,6	98,1
Bas-Saint-Laurent–Gaspésie	119,6	127,6	130,3	119,6	151,9	123,7	110,2	110,2	129,0	123,6	116,9
Saguenay	83,3	123,6	81,9	94,1	86,0	86,0	92,7	71,2	150,5	141,1	107,5
Mauricie	106,2	145,1	116,9	125,0	161,3	162,6	104,8	119,6	172,0	168,0	91,4
Québec	95,4	123,6	94,1	112,9	146,5	131,7	99,5	147,9	159,9	177,4	108,9
Montréal	123,6	104,8	104,8	111,6	170,7	133,1	123,7	121,0	141,1	158,6	91,4
Abitibi	76,6	72,6	88,7	102,2	0,0	0,0	78,0	73,9	64,5	0,0	84,6
Laurentides	153,2	151,9	166,7	157,3	185,5	185,5	149,2	168,0	166,7	135,7	126,3
Pontiac	127,6	121,0	155,9	151,9	181,5	190,9	137,1	186,8	153,2	137,1	147,9
Labelle	145,1	154,5	162,6	145,2	173,4	178,8	137,1	176,0	166,7	121,0	130,3
Gatineau	139,8	130,3	186,8	162,6	180,1	184,1	139,8	157,2	161,3	154,6	141,1

a. **SE** : sapinière à épinettes.

SS : sapinière.

CR : cédrière résineuse (thuyaraie résineuse).

FIRR : feuillus intolérants à l'ombre avec résineux et à tendance résineuse.

ERRR : érablière résineuse à tendance résineuse.

ERRF : érablière résineuse à tendance feuillue.

FIRF : feuillus intolérants à l'ombre avec résineux et à tendance feuillue.

ER : érablière.

ERFT : érablière à feuillus tolérants à l'ombre.

ERFI : érablière à feuillus intolérants à l'ombre.

FI : feuillus intolérants à l'ombre.

Source : L. Beauchamp, J.-M. Bilodeau and R. Savoie. *La forêt privée du Québec, son potentiel ligneux*. Longueuil, Fédération des producteurs de bois du Québec, 1988.

APPENDIX 2

Regional federations of the UPA

ABITIBI-TÉMISCAMINGUE
970, avenue Larivière
Rouyn-Noranda (Québec) J9X 4K5
819 762-0833
abitibi-temiscamingue@upa.qc.ca

BAS-SAINT-LAURENT
284, rue Potvin
Rimouski (Québec) G5L 7P5
418 723-2424
bas-saint-laurent@upa.qc.ca

CAPITALE-NATIONALE–CÔTE-NORD
5185, rue Rideau
Québec (Québec) G2E 5S2
418 872-0770
cncn@upa.qc.ca

CENTRE-DU-QUÉBEC
1940, rue des Pins
Nicolet (Québec) J3T 1Z9
819 293-5838
centre-du-quebec@upa.qc.ca

CHAUDIÈRE-APPALACHES
2550, 127e Rue
Saint-Georges (Québec) G5Y 5L1
418 228-5588
chaudiere-appalaches@upa.qc.ca

ESTRIE
4300, boul. Bourque
Sherbrooke (Québec) J1N 2A6
819 346-8905
estrie@upa.qc.ca

GASPÉSIE-LES ÎLES
172, boul. Perron Est
New Richmond (Québec) G0C 2B0
418 392-4466
gaspesie-iles@upa.qc.ca

LANAUDIÈRE
110, rue Beaudry Nord
Joliette (Québec) J6E 6A5
450 753-7486
lanaudiere@upa.qc.ca

MAURICIE
230, rue Vachon
Trois-Rivières (Québec) G8T 8Y2
819 378-4033
mauricie@upa.qc.ca

MONTÉRÉGIE
3800, boul. Casavant Ouest
Saint-Hyacinthe (Québec) J2S 8E3
450 774-9154
upamonteregie@upa.qc.ca

OUTAOUAIS-LAURENTIDES
15, chemin de la Grande-Côte, bureau 200
Saint-Eustache (Québec) J7P 5L3
450 472-0440
outaouais-laurentides@upa.qc.ca

SAGUENAY–LAC-SAINT-JEAN
3635, rue Panet
Jonquière (Québec) G7X 8T7
418 542-5666
saglac@upa.qc.ca

APPENDIX 3

Hydro-Québec units

For information on property rights, including easements, Hydro-Québec properties and compensation paid to landowners, contact the following:

Hydro-Québec Équipement et services partagés
Direction – Services immobiliers
Telephone : 1 800 257-0753

For information about the operation and maintenance of transmission lines under this agreement, contact the following:

Hydro-Québec TransÉnergie
Direction – Plans et soutien opérationnel
InfosLignesdetransportHQT@hydro.qc.ca

NOTES

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