



Customized methods of intervention

Hydro-Québec uses a range of methods of intervention for controlling the growth of vegetation. Its criteria for doing so are based on environmental factors, efficiency, safety, health, and cost. The one constant factor is that the utility always takes into account the natural environment and the use that is made of the right-of-way. **In short, Hydro-Québec uses the appropriate method of intervention for controlling vegetation, in the right place and at the right time.**

The utility uses three types of intervention for clearing the right-of-ways, either alone or in combination:

- selective cutting (chainsaw, clearing, cutting and mowing);
- herbicides (pesticides which kill or inhibit the growth of certain plants);
- land-use development (bicycle paths, rehabilitation, gardens, etc.).

It should be noted that in most cases Hydro-Québec does not own the land which its transmission lines cross. It merely owns a *servitude*, which gives it access to the right-of-way and allows it to carry out maintenance work on it.

Skilled crews

The personnel in charge of carrying out the work includes specialized forestry workers; these are skilled people who have had technical training and have knowledge of the environment. Hydro-Québec monitors the work while it is being carried out and, once it has been completed, performs a follow-up to assess whether the intervention has been successful.



For additional information, please contact:



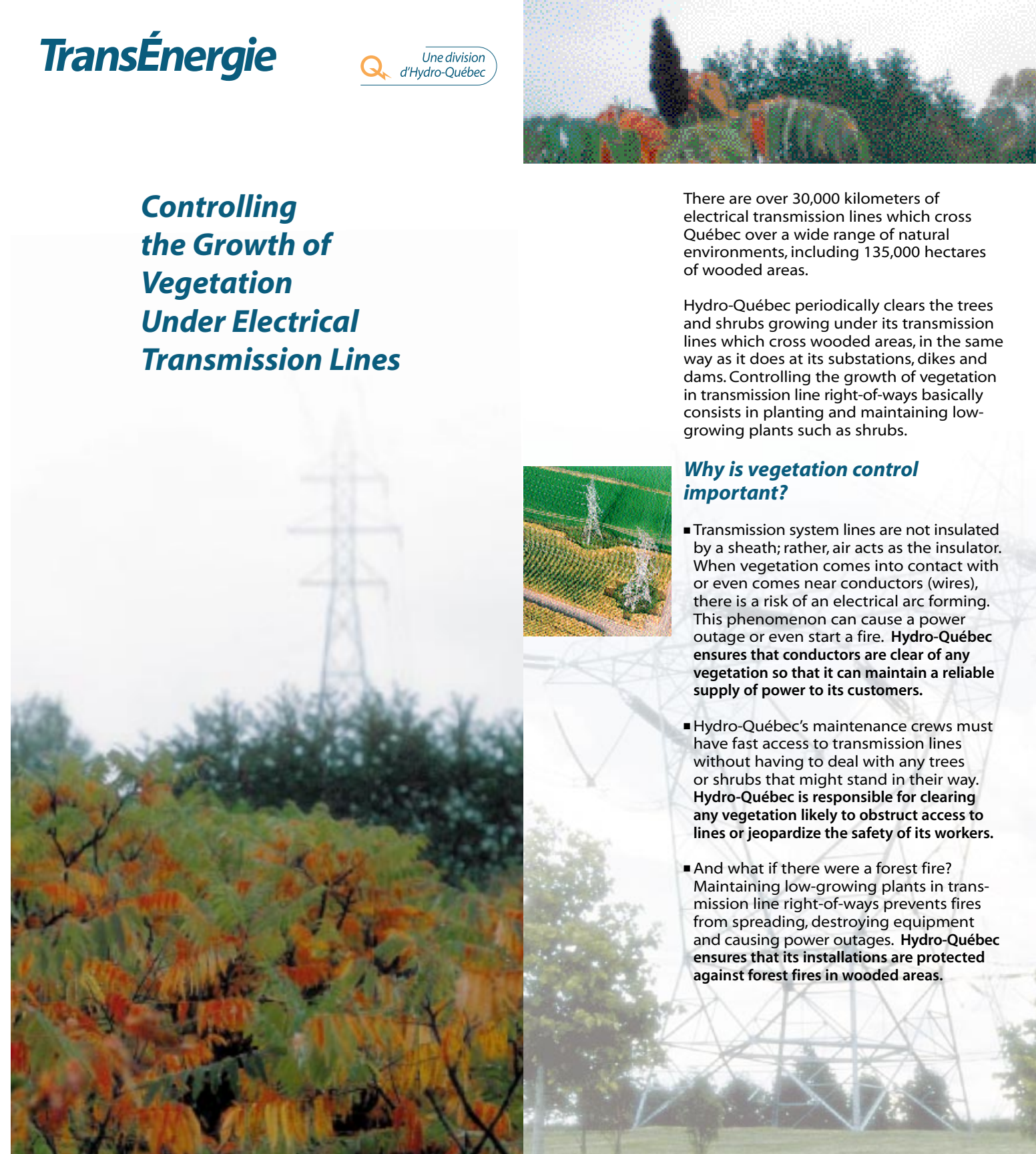
Controlling the Growth of Vegetation Under Electrical Transmission Lines

There are over 30,000 kilometers of electrical transmission lines which cross Québec over a wide range of natural environments, including 135,000 hectares of wooded areas.

Hydro-Québec periodically clears the trees and shrubs growing under its transmission lines which cross wooded areas, in the same way as it does at its substations, dikes and dams. Controlling the growth of vegetation in transmission line right-of-ways basically consists in planting and maintaining low-growing plants such as shrubs.

Why is vegetation control important?

- Transmission system lines are not insulated by a sheath; rather, air acts as the insulator. When vegetation comes into contact with or even comes near conductors (wires), there is a risk of an electrical arc forming. This phenomenon can cause a power outage or even start a fire. **Hydro-Québec ensures that conductors are clear of any vegetation so that it can maintain a reliable supply of power to its customers.**
- Hydro-Québec's maintenance crews must have fast access to transmission lines without having to deal with any trees or shrubs that might stand in their way. **Hydro-Québec is responsible for clearing any vegetation likely to obstruct access to lines or jeopardize the safety of its workers.**
- And what if there were a forest fire? Maintaining low-growing plants in transmission line right-of-ways prevents fires from spreading, destroying equipment and causing power outages. **Hydro-Québec ensures that its installations are protected against forest fires in wooded areas.**



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How often does the work have to be done?

The clearing of vegetation under electrical transmission lines is done about every 5 years, but this interval of time depends on the type of intervention being carried out as well as on the climatic zone involved. Thus, the more northern a line's location, the fewer the interventions since vegetation tends to grow at a slower rate.

Environmental friendliness

An environmental assessment is first done prior to any work being carried out so that all of the sensitive elements can be identified. A "sensitive element" is a component which must be protected while the work is being carried out in the surrounding area. Some examples include residences, streams, drinking water supply, gardens, lakes, fish farms, orchards, and wildlife habitats. Hydro-Québec assigns a perimeter of protection (i.e. a zone in which specific measures are applied) for each of these elements.

And what about wildlife? Many scientifically recognized studies revealed a lack of any negative impact on the animals which use the right-of-ways when work was carried out in accordance with Hydro-Québec's procedures.



Proper use of herbicides

An environmental assessment of the various modes of intervention shows that herbicides may be used without jeopardizing the health of workers and the public or harming the environment.

When Hydro-Québec decides that the use of herbicides is warranted, the intervention procedure most often consists in spraying leaves and stems with products such as Garlon 4 (triclopyr) or Tordon 101 (2,4-D and picloram). The mixtures are used in highly diluted form, i.e. one part herbicide to one hundred parts water. Trees and shrubs are treated during the summer, when they are growing.

The following is another commonly used method of intervention involving herbicides. It consists in selective mechanical cutting following application, over the cut area, of a mixture of mineral or vegetable oil combined with an herbicide. This procedure prevents the formation of stool shoots. In certain cases, herbicide capsules may be manually injected at the base of the stem using a spot gun.

Forestry workers who use herbicides must have the required certificate of competence which is issued by the ministère de l'Environnement et de la Faune du Québec (MEFQ).



About herbicides...

- The use of herbicides is always preceded by an environmental study of the area involved. This study is then submitted to the MEFQ which reviews it prior to issuing a certificate of authorization.
- As stipulated in the *Pest Control Products Act*, Hydro-Québec only uses chemicals which have been certified by the Agence de réglementation de la lutte antiparasitaire (ARLA).
- None of the herbicides used by Hydro-Québec is recognized as being a carcinogen. All of the products are biodegradable and are not prone to bioconcentration. Relatively non-toxic, they do not present a hazard to bees.
- Aspirin, if used at equivalent concentrations, would be three to five times more toxic than picloram, the herbicide which Hydro-Québec sometimes uses. The toxicity of picloram is similar to that of table salt.
- The 2,4-D chemical which Hydro-Québec uses is the same type of herbicide (Killlex, etc.) which people use to get rid of dandelions on their lawns.
- Herbicides are applied selectively, i.e. only large trees (which could reach electrical conductors) are treated. Hence, while the work is being carried out, many shrubs and bushes are protected (dogwood, red currant, wild raspberry, viburnum, yew, hazel, grasses, etc.).



- Hydro-Québec makes every effort to spray large trees when they are still small since they require less herbicides than mature trees.
- Herbicides are mainly used in wooded and agroforestral areas. Special protection measures are used for all zones which contain sensitive elements.
- Selective herbicide application is more efficient than mechanical cutting for controlling the growth of woody vegetation (trees). Contrary to the type of cutting which increases the thickness of undesirable stems, herbicides prevent the reproduction of trees through clump shoots and root suckering.
- Over the long term, the proper use of herbicides leads to a preponderance of grass and shrubs under right-of-ways, thus requiring fewer interventions.

The MEFQ's statistics on the sale of pesticides in Québec in 1995 show that only 0.7% of these chemicals were designed for the control of vegetation in road, rail and electrical transmission line right-of-ways. Use of pesticides by sector was broken down as follows: farming – 78%; domestic use – 11%; landscaping – 4%.

