

ELECTRIFYING MONTRÉAL

Transportation Electrification Strategy 2016–2020

Montréal 

Message from the Mayor



In the wake of the 21st United Nations Climate Change Conference (COP 21), Montréal wants to take a stand as an innovative city by investing in new forms of technology and in transportation electrification. The struggle to counter climate change and reduce greenhouse gas emissions is a choice that Montréal, as a society, intends to uphold.

In this regard, as the mayor, I am confirming Montréal's position as a leader in the area of transportation electrification, which will contribute to the City's goal of reducing greenhouse gas emissions by 30% compared to 1990 levels, by the year 2020. Several innovative projects proposed by the municipal administration are presented in this strategic document on transportation electrification.

Municipalities are increasingly being asked to take a more significant role in the fight against climate change, and Montréal plans to act as a model for other cities around the world. The Transportation Electrification Strategy includes ten strategic goals to create an environment that will foster innovation and support the transition to renewable and sustainable energy forms.

To ensure a sustainable transition to transportation electrification, Montréal is counting on the continued collaboration of its many partners, especially the Government of Québec.

We are convinced that implementing the groundbreaking measures proposed in the Strategy will create a context that is favourable to transportation electrification, is innovative, and offers a better quality of life to all citizens while encouraging economic momentum in the city.

Denis Coderre
Mayor

Message from the Transportation Manager



Transportation electrification is an aspect of mobility that supports the fight against climate change while also offering citizens a high-quality environment. In order to take concrete action, the City of Montréal has proposed a Transportation Electrification Strategy that touches on several of the City's areas of expertise, to ensure tangible, sustainable change.

In addition to the goals being steered by the City, the municipal administration is promoting the contribution of public and private partners in the push toward transportation electrification. We highlight, for instance, the participation of the Société de transport de Montréal, which is working toward electrifying the public transportation network, and the Réseau Électrique Métropolitain project spearheaded by the Caisse de dépôt et placement du Québec. The City is also encouraging suppliers of self-service vehicles to gradually convert their fleets to electric, a project that goes hand in hand with the municipality's roll-out of a network of charging stations.

The Strategy outlines a concrete plan that will allow the City of Montréal to take a stand as a North American pioneer in transportation electrification. The Strategy's goals will help ensure a quality environment for Montréal's citizens while also promoting viable economic development.

Aref Salem
Transportation Manager

Message from the Councillor for Transportation Matters, including Transportation Electrification



Reducing our environmental footprint, as a society, is a subject that's particularly important to me. Thus I'm especially proud that the City of Montréal is taking a leadership position by adopting the Transportation Electrification Strategy.

This Strategy reveals the efforts that the Montréal community is ready to make to ensure a healthy environment and a promising future for our children.

In addition to the concrete actions led by the City, such as rolling out a network of charging stations, Montréal also plans to act as a facilitator for green companies, to create a climate that fosters innovation and sustainable economic development. The municipal administration also intends to set the example by converting its own fleet of service vehicles to electricity.

Through its ten strategic goals, grouped together in a single strategy, the City of Montréal wants to underscore its commitment, as a municipality, to reducing the dependence on fossil-based energy, and to creating an environment that promotes sustainable mobility.

Elsie Lefebvre

Councillor for Transportation Matters,
including Transportation Electrification

Preamble

At the conclusion of his mission to France for the 21st UN Conference on Climate Change (COP21), the Mayor of Montréal and President of the Montréal Metropolitan Community (CMM), the Honourable Denis Coderre, announced that the City of Montréal had endorsed the Local Government Leaders' Declaration on Climate Change. Through this Declaration, local and regional government leaders from all five continents made a collective pledge in the fight against climate change.

Montréal thus intends to take an international leadership role to fight climate change, at a time when towns and cities are developing a New Urban Agenda to meet local and global challenges. Now more than ever, towns and cities have a key role to play in the fight against climate change; the targets set by national governments cannot be achieved without their contributions. Cities are an integral part of the solution because they are in a position to take concrete action that will have an impact while facilitating the achievement of national targets.

To fight against climate change, Montréal has pledged to take all necessary steps to achieve its reduction target for greenhouse gases (GHG): a 30% decrease of 1990-level emissions by 2020. Since transportation activities are one of the main sources of GHG in Québec, particularly in Montréal, this undertaking opens the door to a transportation-related energy transition to significantly reduce the consumption of fossil-based energy.

In the area of transportation, Montréal intends to carry out this energy transition by taking action on three fronts:

- By focusing on the development of active and public transportation and on high-density and diversified land use, thereby reducing dependence on automobiles and minimizing travel distances.
- By facilitating the gradual electrification of private and public vehicles, thereby reducing our dependence on fossil-based energy and encouraging greater reliance on a renewable energy source: hydroelectricity.
- By promoting sustainable mobility among local residents.

These land use goals and the Transportation Electrification Strategy are in line with the policy guidelines announced by the Government of Québec and various partners. They are based on the guidelines set out in the City of Montréal's plans and policies, including the following:

- The City of Montréal Urbanism Plan and the Montréal Agglomeration Land Use and Development Plan, which provide a framework for land use development with a view to intensifying and diversifying urban activities around the public transportation network access points while ensuring complementarity with other modes of transportation.

- The Transportation Plan, which sets out the City's commitment to sustainable mobility and proposes equipping parking spaces with charging stations for fuel-efficient vehicles and minicars.
- The 2010–2015 Montréal Community Sustainable Development Plan, which aims in particular to improve air quality, reduce GHG emissions and encourage transportation electrification.
- The Economic Development Strategy, which aims to increase the technological and financial benefits of the energy transition and thus to speed the development of a local transportation electrification / intelligent transportation sector.
- The 2013–2020 Corporate GHG Emissions Reduction Plan.
- The 2013–2020 Montreal Community GHG Emissions Reduction Plan.
- The Parking Policy.
- The Rolling Stock Green Policy.

TRANSPORTATION ELECTRIFICATION STRATEGY



The City of Montréal's electrification strategy has ten strategic goals:

- 1** Incorporate transportation electrification needs into the planning and management of the City's housing stock.
- 2** Convert the municipal fleet of combustion engine vehicles to electric vehicles.
- 3** Implement an economic development action plan to develop a local transportation electrification and intelligent transportation sector.
- 4** Create an institute on electrification and intelligent transportation
- 5** Electrify the public transportation network operated by Montréal's municipal transportation agency (Société de transport de Montréal / STM)
- 6** Participate actively in the Réseau Électrique Métropolitain (RÉM) project
- 7** Implement the electrification measures set out in the Parking Policy
- 8** Roll out a network of charging stations to support the desired gradual conversion of Montréal's automobile stock
- 9** Implement a framework to facilitate the private-sector roll-out of a self-serve network of electric vehicles.
- 10** Ensure ongoing collaboration with public and private partners in the electrification initiatives and in the promotion of sustainable mobility, in particular the Government of Québec, Hydro-Québec, the Caisse de dépôt et placement du Québec, the Montréal taxi bureau and the Montréal electric services commission.

1

Incorporate transportation electrification needs into the planning and management of the City's housing stock



The City ensures that transportation electrification needs are incorporated into its property management and planning processes. This can be done upstream of real-estate projects, for instance by planning for new charging stations or benefiting from the existing network. In addition, this approach can be applied downstream, to existing buildings, around which electrification transportation components can be installed.

Charging stations have already been installed in municipal parking lots around public or sports facilities to meet residents' needs.

In the case of existing municipal buildings, transportation electrification equipment will be assessed and put in place based on the development plan for the municipal electric vehicle fleet and users' needs.

In all future municipal real-estate projects that include parking facilities, electric charging stations will be installed to meet users' needs.

The City also plans to improve its expertise or to contract skilled professionals to set implementation criteria and other technical aspects relating to installing transportation electrification equipment.

2

Convert the municipal fleet of combustion engine vehicles to electric vehicles



3

Implement an economic development action plan to develop a local transportation electrification and intelligent transportation sector



The City of Montréal's Transportation Electrification Strategy may well generate substantial economic benefits. It is designed to foster ambitious initiatives aimed at speeding the transition to sustainable and non-polluting modes of transportation.

The electrification of the City's vehicle fleet, the STM's investments, the roll-out of charging stations and the undertaking of urban planning initiatives will all help to make Montréal a choice location that attracts companies, research centres and institutions interested in transportation electrification. These various drivers are in addition to Montréal's existing major assets, which contribute to its dynamic business sector. Among other things, Montréal has an abundant pool of qualified labour, four universities, four affiliated establishments of higher education, world-class research centres, dynamic industrial clusters in cutting-edge sectors and an intelligent, digital city strategy. As a result, Montréal is one of the seven top intelligent cities in the world, according to the Intelligent Community Forum (2016).

The City plans to take all necessary steps to generate concrete benefits from its transportation electrification investments and efforts. In particular, three goals are being pursued:

- Mobilizing stakeholders in the electric transportation sector around a series of shared objectives.

- Leveraging transportation electrification initiatives with a view to favouring benefits for local companies and institutions.
- Increasing Montréal's attractiveness as a location for companies and institutions in this sector.

In order to maximize the economic and technological benefits of the energy transition, the City will draw up and implement an action plan to develop an electric/intelligent vehicle sector. This plan will help determine high-potential sectors and identify potential levers of action and attractiveness factors. It will also guide the decision-making process regarding electric sector development.

The City also plans to organize technology and business showcases to gain access to the latest technologies and innovations involving electric and intelligent vehicles. These showcases will enable companies based in Montréal and around Québec to share their expertise in these areas with the City.

The implementation of a technological watch completes the economic development action plan. This watch will have three priority action areas: charging infrastructure, intelligent/connected transportation and energy/communication materials.

4

Create an institute on electrification and intelligent transportation



Following on the economic development action plan, the City will soon begin working on creating an institute on electrification and intelligent transportation, which will leverage Montréal's advantages as an innovator in these areas. The institute will count on partnerships with the universities and the innovation district, and on the availability of land near the downtown core, to create a world-caliber centre for developing, experimenting with and promoting innovations and new concepts in electric and intelligent transportation. Montreal wants to offer manufacturers favourable conditions for testing new forms of technology and getting them to market faster. A testing corridor will be created to allow testing under realistic conditions and to showcase new technology.

The institute on electrification and intelligent transportation will have the following mission:

- Fostering greater R&D synergy between regional sustainable mobility partners.
- Stimulating the marketing of innovations to accelerate business growth.
- Implementing the testing corridor for electric and intelligent forms of transportation.
- Developing international partnerships.

Over time, this project is likely to attract increasing investments in this area, in addition to accelerating the growth of Montréal businesses.

5

Electrify the public transportation network operated by Montréal's municipal transportation agency (Société de transport de Montréal / STM)



The Société de transport de Montréal (STM) is in charge of planning and operating the public transportation network for the Montréal agglomeration. It is a key stakeholder in the transition to electricity. Founded 50 years ago, Montréal's metro/subway system already operates in electric mode and records 250 million trips each year.

The STM's 2016–2025 electrification strategy consists of three main action areas:

1. Reducing GHG emissions per passenger-kilometre:

- By replacing its diesel buses with hybrid vehicles pending the arrival of electric buses (close to 1,000 such buses during the 2016–2025 period).
- By acquiring electric or hybrid service vehicles (2016–2025).

2. Increasing the service offer for electric public transportation:

- By bringing into service 52 Azur trains, 14 of which will be used to increase the fleet and the service level (2016–2018).

3. Electrifying the surface network:

- By purchasing only electric buses as of 2025, or as soon as technology allows.
- By participating in the City Mobility / Cité Mobilité pilot project, which includes purchasing three fully electric vehicles and installing two charging stations to test quick-charging technology under operational conditions.

In these ways, the STM intends to play a facilitating role and to support the industry's development of all-electric technology that offers the same level of service as diesel buses.

6

Participate actively in the Réseau Électrique Métropolitain (RÉM) project



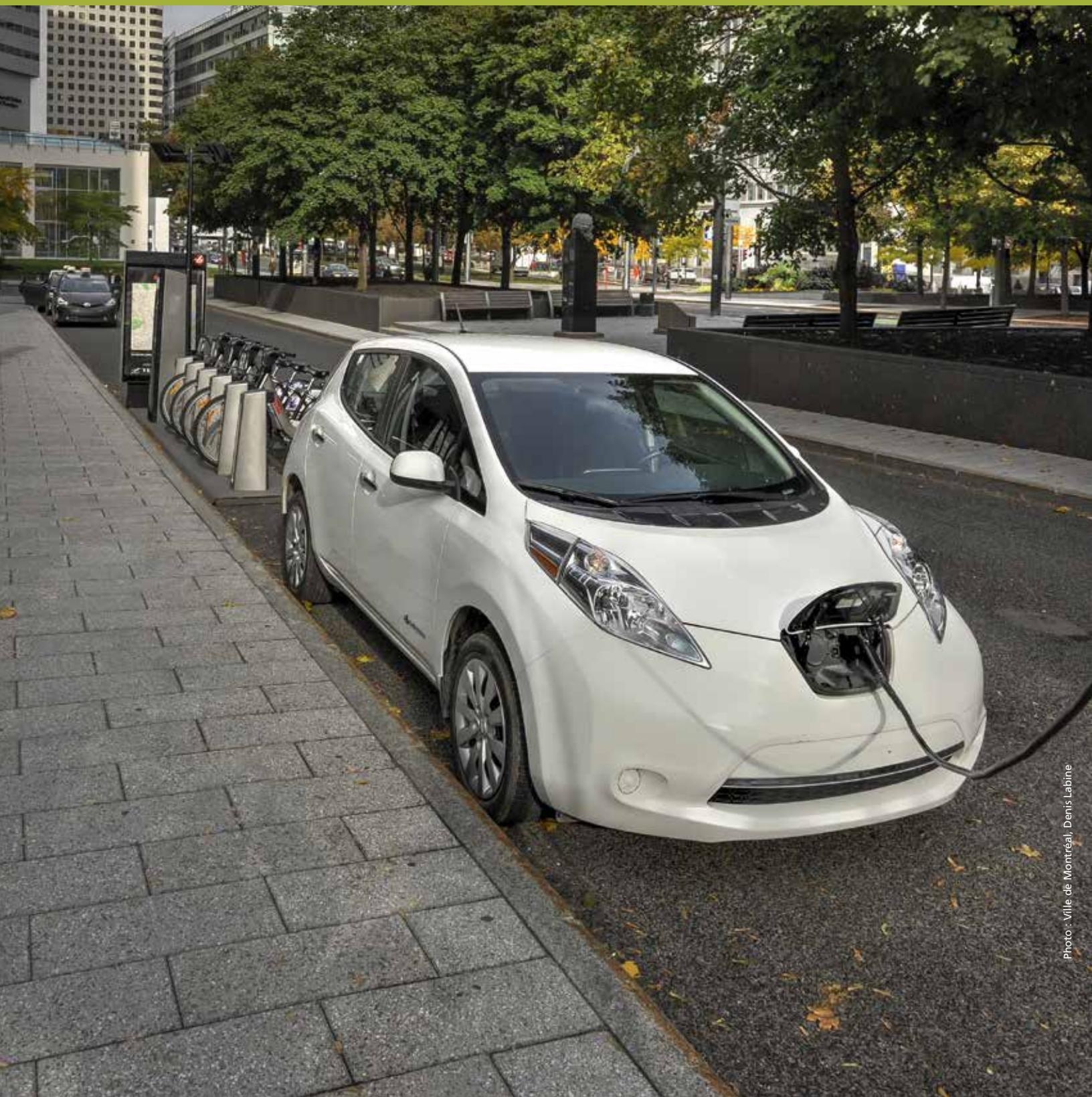
The Caisse de dépôt et placement du Québec has announced a project to create a metropolitan electric network (RÉM) linking the downtown to Pierre Elliott Trudeau International Airport and to Montréal's West Island, North Shore and South Shore. This 67-km network will considerably improve public transportation service to these areas, while also offering users faster, more frequent and more comfortable service.

Because of the high-quality service to be provided, the project will promote real-estate development in the areas near its 24 stations, thereby contributing to the creation of a new clientele.

In tandem with the Government of Québec's actions to extend the blue and orange subway lines, the RÉM will noticeably increase the proportion of travel powered by electricity, as early as December 2020.

7

Implement the electrification measures set out in the Parking Policy



Adopted in June 2016, the Parking Policy puts forward various measures associated with transportation electrification and parking management for self-service electric vehicles.

The proposed measures include providing on-street parking places for electric vehicles (equipped with charging stations), developing sustainable mobility options (bicycles, BIXI, taxis, self-service vehicles, electric cars, car sharing) and creating combination pricing including electric vehicle charging. Similarly, proposals have been made to revise the regulatory framework and to require parking spaces for electric vehicles in private parking facilities and in major real-estate projects, as well as installing electric charging stations in these locations.

The Parking Policy also proposes evaluating the feasibility of an urban distribution centre. Such a centre would focus on the use of small electric vehicles to ensure “last kilometre” delivery. For instance, parking places would be reserved for electric vehicle operators. Through the use of intelligent sensors, delivery specialists could reserve a parking place equipped with a charging station near their delivery destination.

These measures are all related to mobility development, road sharing and the regulatory framework. They will each contribute in their own way to achieving the GHG reduction targets.

8

Roll out a network of charging stations to support the desired gradual conversion of Montréal's automobile stock



The City of Montréal is moving ahead with the installation of a charging network for privately owned electric vehicles (on-street and off-street). The goal is to offer a network of approximately 1,000 charging stations by 2020 to serve the entire municipal territory.

To this end, the City joined Hydro-Québec's Electric Circuit in 2013. This is Canada's first public network of charging stations for electric vehicles, powered by clean and renewable energy supplied by Hydro-Québec.

The decision to join the Electric Circuit prompted the City's acquisition of a number of 240-volt charging stations, most of which are installed off-street in various Montréal boroughs. As regards the on-street charging stations, a pilot project was initially carried out in downtown Montréal. In light of the project's popular success, the City committed to installing more on-street charging stations based on the lessons learned during the pilot project. This offer is in addition to the charging stations installed in private homes and in workplaces by other Electric Circuit partners. Quick-charge stations will also be installed.

Amid a wave of innovation, the installation of on-street charging stations was the first initiative of its kind in North America. The charging stations will be introduced gradually, at a faster pace each year. Initially, the City of Montréal began by creating a network of charging stations in the downtown area, as well as in other central

districts. With over 100 charging stations expected by the end of 2016, Montréal's downtown area will have by far the largest charging network of any Canadian city. The roll-out in all Montréal boroughs, which will continue over the next few years, is slated for completion in 2020, with a total of over 1,000 charging stations. At the same time, the installation of off-street charging stations will continue in public parking facilities.

The installation of on-street charging stations poses a challenge in densely built urban areas such as Montréal's central boroughs. Charging stations are a new type of urban property that must fit in with existing public infrastructure. Esthetic considerations must also be taken into account, in addition to the purely technical considerations relating to installation. Therefore, certain adjustments must be made to the standard-design charging stations. Site selection criteria must also enter into the equation. Therefore, the ongoing coordination of all partners is required for network planning and charging-station installation and maintenance.

9

Implement a framework to facilitate the private-sector roll-out of a self-serve network of electric vehicles



Montréal is pinning its hopes on integrated mobility, focusing more on individual mobility than on infrastructure, through the diversification and complementarity of modes of transportation. Montréalers have benefited from a car-sharing system for over 20 years. For the past several years, they have also had access to self-serve vehicles (SSV), some of which are all-electric, to meet specific occasional transportation needs, particularly in the central districts.

In 2015, Montréal launched an international call to help private companies set up a city-wide system of self-service electric vehicles. The goal of the selected process was to identify the business model best adapted to Montréal's reality.

The City of Montréal then put in place a set of conditions conducive to such a roll-out by establishing a regulatory framework and soliciting the contributions of multiple private suppliers with a view to operating and managing a fleet of self-serve electric vehicles. In addition, the SSV system will benefit from the public network of 1,000 on-street charging stations that the City will be installing.

Depending on how fast the charging stations will be introduced, the SSV suppliers will gradually have to roll out electric vehicles within their fleet. By 2020, approximately 1,000 self-service electric vehicles will be in circulation in Montréal, if not more.

10

Ensure ongoing collaboration with public and private partners in electrification initiatives and in the promotion of sustainable mobility



In order to maximize the impact of its initiatives and to implement complementary electrification projects, the City aims to develop ongoing collaboration with its public partners.

First and foremost, these efforts tie in with the Government of Québec's transportation electrification action plan, which aims to increase the number of electric vehicles in the provincial automobile fleet, to take part in the fight against climate change, to reduce oil-related energy dependence and to contribute to Québec's economic development by focusing on a forward-looking sector and by using electric energy available in Québec. The financial support available under this program thus contributes to the successful achievement of certain measures put forward by the City of Montréal.

The City of Montréal is also called upon to collaborate with the Caisse de dépôt et de placement du Québec (CDPQ) and the future regional transportation agency (Agence régionale de transport / ART) to implement major infrastructure in the area of electric public transportation.

Hydro-Québec is also one of the City's key partners in the area of electrification.

In addition to these partners, there is the Montréal taxi bureau (Bureau du taxi de Montréal), whose Taxi Industry Policy proposes to support the electrification of a portion of the taxi/limousine fleet to increase the number of electric vehicles by 2020, and accelerating the installation of electric charging stations.

The Montréal electric services commission also plays an important role in implementing the array of municipal projects.

And lastly, the City wants to highlight and support the electrification actions and projects of its private partners, such as Téo Taxi, which is a leading player in this area.

Implementation

The City of Montréal's electrification strategy touches on various aspects of transportation involving the municipal apparatus, the community and various institutional and private partners.

In particular, the strategy draws on the expertise of various municipal departments, the boroughs and the Montréal electric services commission (Commission des services électriques de Montréal / CSEM). The strategy also relies on the collaboration of the City's institutional and private partners, which are also involved in the energy transition to sustainable, low-carbon transportation.

In this regard, a monitoring system will be put in place to evaluate the contributions of these municipal measures to GHG reductions, with a view to achieving the targets set out in the 2013–2020 Plan to Reduce GHG Emissions in the Montréal Community. An accountability requirement may be incorporated into the follow-up and assessment of the plan.

The Transportation Electrification Strategy attests to the City of Montréal's leadership role in the fight against climate change, as expected by citizens of their cities and towns. The targets set by national governments must be complemented by concrete action by cities as an integral part of the solution, as set out in the strategy.

The City will be pursuing its overall efforts to encourage Montréalers to support transportation electrification and to use active and public modes of transportation.

By putting these various measures in place, the City is setting the example when it comes to encouraging and developing transportation electrification and sustainable mobility. These measures will serve to demonstrate the various possibilities to private and institutional partners.

The City of Montréal is thus playing a leadership role in the local community and among other cities in the metropolitan region in the fight against climate change and in efforts to reduce GHG emissions.

The strategy is accompanied by an action plan to be carried out in accordance with the following timetable:

MEASURES	TIMEFRAME
Inclusion of transportation electrification needs in the planning and management of the City's housing stock	ONGOING
Conversion of the municipal combustion engine vehicle fleet to electric vehicles	2016-2020
Submission of the Economic Development Action Plan	2016
Creation of an institute on electrification and intelligent transportation	2016-2017
STM: <ul style="list-style-type: none"> • Replacement of diesel buses by hybrid vehicles • Acquisition of 52 Azur trains • Electrification of bus fleet • Participation in the City Mobility demonstration project 	starting in 2016 2016-2018 starting in 2025 2017-2019
Execution of the Réseau Électrique Métropolitain (RÉM)	2016-2020
Implementation of Parking Policy electrification measures	2016-2020
Installation of a charging-station network <ul style="list-style-type: none"> • Downtown and central districts • Throughout the territory 	2015-2016 2017-2020
Roll-out of network of all-electric SSV	2016-2020
Collaboration with partners in the electrification initiatives	ONGOING
Evaluation of the strategy's contributions to GHG reduction	ANNUAL

Published by the Ville de Montréal
Service de la mise en valeur du territoire
Direction de l'urbanisme
303 Notre-Dame Street East
Montréal QC H2Y 3Y8
Canada

ville.montreal.qc.ca/urbanisme

Legal deposit - Bibliothèque et
Archives nationales du Québec, 2016

Legal deposit - Library and
Archives Canada, 2016

978-2-7647-1458-4
Transportation Electrification Strategy 2016–2020
Printed document, English

978-2-7647-1459-1
Transportation Electrification Strategy 2016–2020
PDF, English

978-2-7647-1441-6
Stratégie d'électrification des transports 2016-2020
Printed document, French

978-2-7647-1442-3
Stratégie d'électrification des transports 2016-2020
PDF, French

Printed in Canada
This document is printed on recycled paper.



