

Release

SUMMARY OF THE KEY ELEMENTS OF THE RÉGIE DU BÂTIMENT DU QUÉBEC'S NEW INTERPRETATION OF CHAPTER V, ELECTRICITY, OF THE CONSTRUCTION CODE

On March 7th, 2022, the Régie du bâtiment du Québec (RBQ) updated its explanatory booklet to help the public understand the changes to electricity regulations. It addresses the addition of chargers in multi-unit buildings and aims to facilitate access to electric vehicle (EV) charging. Recharge Véhicule Électrique (RVE) supports the RBQ's new interpretations on the subject.

Several terms have been introduced to clarify the various electrical components. Here is a list of terms with their acronyms, commonly used terminology and definitions.

Please note that every excerpt from said explanatory booklet has been translated by RVE given that the booklet has not been translated by the RBQ. The pages mentioned refer to the original booklet in French.

Explanatory booklet term	Commonly used terminology	Definition *
Electric Vehicle Supply Equipment (EVSE)	Charging Station or Charger	<p>"Thus, an electric vehicle supply equipment (EVSE) [...]" (p. 133)</p> <p>"a complete assembly consisting of cables, connectors, devices, apparatus, and fittings installed for the purpose of power transfer and information exchange between the branch circuit and the electric vehicle" (article 86-100)</p>
Electric Vehicle Energy Management System (EVEMS)	EVEMS multi-tiers	<p>"An EVEMS is a smart load management system that optimizes the distribution of available power to all EVSE by monitoring the branch circuits, the feeders, as well as the connection, to avoid exceeding the capacity of the installation [...]" (page 136)</p>
Electric Vehicle Energy Management System (EVEMS)	Charge Controller, EVEMS single-tiers	<p>"Another practice is to use a load monitoring and shedding device, commonly called a "charge controller" " (page 134)</p> <p>"An EVEMS allows, among other things, to monitor the feeder current supplying the panel of a dwelling and to offload [unplug] the connected charger when the current reaches a predefined threshold" (page 134)</p>
Load Miser		<p>"Usually controls two loads"</p> <p>For example, "A load miser allows the electric vehicle charger to be powered when the electric stove is drawing little or no power, thus preventing the possibility of simultaneous powering." (page 134)</p>

Here's what's important to remember about this new interpretation.

The three main changes in this new interpretation are:

1. The introduction of the acronym "EVSE" to designate an electric vehicle charging device.
2. The segmentation of energy management systems: the RBQ now distinguishes between a system whose function is to manage energy at the building level (EVEMS multi-tier) and a charge controller whose purpose is to manage energy at the dwelling level (EVEMS single-tier).
3. A clarification of how the load of the chargers should be calculated upstream of the charge controller that does the energy management at the dwelling level.

The clarification on how to calculate the chargers upstream of the charge controller or EVEMS reads as follows: "When the EVSE is connected to the panel or dwelling feeder, with or without an EVEMS, it is mandatory to include the EVSE rated load in the load calculation per Sections 8-200 and 8-202 anywhere upstream of the dwelling panel feeder to avoid any risk of overloading the rest of the distribution upstream of the dwelling panel feeder [e.g., meter stack transformers if present, main power supply]."

Here is a summary of what is included in the 2018 edition and the clarification that the March 2022 RBQ update provides regarding the calculation of a charger on the feeder supplying the dwelling panel and the calculation of chargers on the rest of the distribution upstream of the dwelling panel feeder:

	Feeder of the dwelling's panel (Distribution panel of the dwelling)	Remaining distribution upstream of the dwelling panel feeder (e.g., transformers of the meter stacks, main power supply)	Feeder of the dwelling's panel (Distribution panel of the dwelling)	Remaining distribution upstream of the dwelling panel feeder (e.g., transformers of the meter stacks, main power supply)
Car Charger	8-200 1) c) 90, 70 or 35%	No specific indication (0 to 100%)	8-200 1) c) 90, 70 or 35%	8-202 3) a) 1st at 100% + 2nd and 3rd at 65% + 4th and 5th at 40% + 6th and 20th at 25 % +21st and more at 10%
Car charger on charge controller (EVEMS single-tier)	86-300 2) 0%		86-300 2) 0%*	
Car charger on building-level energy management system (EVEMS multi-tier)	(not applicable)		(not applicable)	Explication 86-300, p. 136 0%

*provided that the landing threshold is set at the lowest value:

- the value of the load calculation of the dwelling
- 80% of the panel feeder rated current.

The RBQ clarifies how to calculate the load of chargers (EVSE) on feeder conductors coming from a main service entrance and supplying at least two dwellings. An electrical capacity study is therefore the first step to determine the residual load of a building and to be able to make this load calculation. The recommended methodology to perform a complete capacity study is to use the real consumption data from the meters depending on the transformers. This method allows for a true picture of the consumption peaks of the previous year, according to the Construction Code.

Hydro-Québec collects this data, but it is not currently available. For several years, RVE has been working with Hydro-Quebec to make the actual consumption data (which is collected but not available to the public) accessible.

With the publication of the new explanatory booklet, it is essential that Hydro-Québec provide the actual consumption data in order to implement the RBQ's recommendations. In order to have access to this data, electrical professionals can contact Hydro-Québec and the representative in charge of the building to request access to the data. Only when this data is obtained by an expert in electrical systems can a safe decision about the deployment of charging infrastructure in MURBs be made.

**The quotations are from the explanatory booklet on Chapter V, Electricity of the Building Code of the Régie du bâtiment:*

<https://www.rbq.gouv.qc.ca/fileadmin/medias/pdf/Publications/francais/cahier-explicatif-changement-electricite-2022.pdf> and have been translated by us.

This summary of the new explanatory booklet of the Régie du bâtiment du Québec on Chapter V, Electricity, of the Construction Code includes information that is intended to present the new features of the RBQ's explanatory booklet. It is not a legal or professional opinion.