

What's a radiofrequency meter?

A radiofrequency (RF) meter is an electronic meter that can be read from a distance, either by a meter reader carrying a handheld computer or by a communications network such as the one Hydro-Québec is currently setting up. The RF technology used in the meters is not new and is widely used in other devices, such as baby monitors and cordless phones. Hydro-Québec has three main types of radiofrequency meters:

1. 458 MHz — This meter transmits only when the meter reader is nearby. The meter reader's handheld computer sends a signal to wake up the meter, and the meter responds by sending its consumption data.

NB There are very few meters of this type left in Hydro-Québec's fleet, and they haven't been manufactured for many years now.

2. 900 MHz — This meter transmits periodically, whether or not there is a meter reader nearby. When close to the meter, the meter reader collects data using a handheld computer. Back at the office, the meter reader transmits the data to Hydro-Québec's billing system.

3. Next-generation — This meter registers electricity consumption and enables Hydro-Québec to read the data remotely without the need for a meter reader. It emits RF energy intermittently several times a day, for a few milliseconds each time, totaling less than 90 seconds a day. Next-generation meters are the new industry standard.

[The Selected Technology](#) ■

The Selected Technology

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What about radiofrequency emissions from the next-generation meters? Are they harmful?

Next-generation meters are safe and pose no health hazard.

Hydro-Québec is aware that some people have health concerns and has been following the issue of radiofrequency emissions closely for a number of years.

The selected next-generation meters are fully compliant with the guidelines issued by Health Canada, the recognized authority in the matter, respecting safe levels of exposure to radiofrequency emissions, as determined on the basis of studies carried out in Canada and around the world in recent decades.

RF exposure levels measured 1 m away from a next-generation meter are approximately 55,000 times lower than the threshold recommended by Health Canada. The Royal Society of Canada also felt that the limits set by Health Canada were appropriate, given the state of scientific knowledge to date ([link to report](#)).

The emission rates of next-generation meters are far lower than those of most home electronics (cell phones, microwave ovens, etc.). See table, Comparison of RF Emission Levels.

Next-generation meters also comply with Industry Canada standards, which require that RF products be designed and installed so as to ensure safe exposure levels.

In December 2011, after a technical survey of next-generation meters, Health Canada issued a specific notice stating: "Based on this information, Health Canada has concluded that exposure to RF energy from smart meters does not pose a public health risk."

In March 2012, the Ministère de la Santé et des Services sociaux filed an opinion stating that next-generation meters are not a health risk. The department reiterated its opinion in fall 2013.

A study published jointly by Protégez-vous magazine and Polytechnique Montréal (whose "electro-urban" brigade toured 23 homes and 34 public places in several regions of Québec) concluded that the next-generation meters are standards-compliant and that their RF emissions are well below the threshold established for Canada.

[All about Radiofrequencies](#) ■

All about Radiofrequencies

The RF emission level measured 1 m away from a next-generation meter is approximately 55,000 times less than Health Canada limits. No matter how close you are to the meter, it's safe.

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[What about radiofrequency emissions from next-generation meters? Are they harmful?](#) ■

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How many times a day does the meter emit radiofrequency energy? For a total of how long?

To transmit the recorded data, the new meters emit RF energy intermittently several times a day, for a few milliseconds each time, totaling less than 90 seconds a day.

It's important to know that the RF exposure levels for the new meters are approximately 55,000 times lower than the threshold recommended by Health Canada.

Health Canada says that "in cases where multiple smart meters are installed together, as in some townhouses or high-rise buildings, the total exposure levels from multiple smart meters will still be far below Health Canada's RF energy exposure limits, due to the infrequent nature of transmissions."

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What is the next-generation meters' wattage?

425 mW (milliwatts), or 0.425 W, which is equivalent to that of an LED holiday bulb.

Does the radiofrequency energy emitted by next-generation meters installed together in some buildings mean have a combined effect?

No. The meters have no combined effect when they are close together.

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[Measuring Radiofrequency Energy](#) ■

Measuring Radiofrequency Energy

Exposure to RF emissions 1 m away from a next-generation meter is minimal compared to other RF-emitting devices and background levels of RF energy.

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Has Hydro-Québec determined the safe distance from human beings for installation of a next-generation meter?

To be compliant with the method set out in Health Canada’s Safety Code for the Construction Industry 6, tests done to measure the power of the radiofrequency emissions of next-generation meters were performed at a distance of 1 m. At that distance, the exposure levels of next-generation meters are 55,000 times lower than Health Canada limits. The meters are reliable, safe and pose no health hazard. This is the same position taken by Health Canada and the Ministère de la Santé et des Services sociaux.

Can the radiofrequency emissions from next-generation meters interfere with the operation of pacemakers or implantable cardiac defibrillators (ICDs)?

Tests conducted by Hydro-Québec and Medtronic, the world’s largest supplier of pacemakers, in conjunction with the Montreal Heart Institute, have confirmed that the RF emissions from next-generation meters do not interfere with the operation of pacemakers or ICDs.

In fact, no interference was observed when the Medtronic pacemakers and ICDs were placed as close as possible to next-generation meters manufactured by Landis+Gyr, Hydro-Québec’s main supplier, even though the meters had been intentionally modified to emit radiofrequencies at an abnormally high rate.

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To be compliant with the method set out in Health Canada's Safety Code for the Construction Industry 6, tests done to measure the power of the radiofrequency emissions of next-generation meters were performed at a distance of 1 m. At that distance, exposure levels are approximately 55,000 times lower than the threshold recommended by Health Canada. So a person's exposure to the meter's RF emissions is well below the established guidelines at any distance. The meters are safe.

Will next-generation meters cause interference with motion detectors?

Hydro-Québec has received a few complaints regarding meters and motion detectors. These rare cases concern certain types of equipment and generally occur when a motion detector is located very close to the meter. Hydro-Québec can recommend adapted solutions and invites customers to contact us directly.

Why Health Canada hold a public consultation to review Safety Code 6 regarding wireless radiation from telephones and cell towers, Wi-Fi systems and smart meters?

Health Canada periodically reviews its standards to keep in line with changes in the analysis of scientific knowledge. A public consultation was held about the emission levels authorized by Safety Code 6. Emission levels authorized by Safety Code 6 concern all equipment that uses radiofrequencies, such as communication towers, baby monitors and meters.

The emission levels of next-generation meters are 55,000 times lower than the current standard in Safety Code 6. Even if Health Canada lowers the authorized emission levels, the radiofrequencies emitted by next-generation meters would still remain well under the limits set by Health Canada. Rest assured that next-generation meters do not pose a health hazard.