

# The environmental benefits of electric vehicles



## 1 Clean, renewable charging

The electricity supply in Quebec is one of the most eco-friendly in the world, with 95% derived from hydroelectricity. As water is an entirely clean source of energy, charging an electric vehicle in Quebec is the most environmentally responsible solution.

## 2 Less air pollution

Electric vehicles have a zero greenhouse gas emission index, which means Quebec would enjoy a 3.4-tonne reduction in GHG per year<sup>1</sup>. The transportation sector is the no. 1 source of GHG emissions in Quebec, accounting for 40% of total emissions—half of which come from light vehicles.

## 3 The most environmentally friendly raw material

Quebec has the world's second largest lithium deposit<sup>2</sup>. Thanks to an innovative process that uses hydroelectricity instead of most of the chemicals usually required, Quebec's lithium is extracted more efficiently, more economically, and with less of an environmental impact than anywhere else in the world. Moreover, lithium has the potential to be recycled and reused, generating new business opportunities for the province.

## 4 Farewell to fossil fuels

At a time when Quebec wants to reduce its dependence on oil as part of a larger commitment to decarbonization, electric charging is a greener and more efficient source of energy than any of the alternatives, including hydrogen. Today almost all of the world's hydrogen is produced using fossil fuels, which is currently the most economically viable method<sup>3</sup>. In the few cases where hydrogen is produced using electrolysis, the amount of electricity consumed to travel the same distance is three times higher in a hydrogen vehicle than in one powered by a Li-ion battery<sup>4</sup>.

## 5 Less noise pollution

Electric vehicles are a major factor in reducing traffic noise, which can reach an average of up to 91 decibels in urban areas<sup>5</sup>. Above certain thresholds, noise pollution is known to be extremely harmful to the human nervous system.

<sup>1</sup> Hydro-Québec <sup>2</sup> Report by Met-Chem Canada written for Nemaska Lithium, 2018. <sup>3</sup> OECD/IEA, Renewable Energy for Industry, 2017. <sup>4</sup> Ulf Bossel for IEEE, Does a Hydrogen Economy Make Sense?, 2006. <sup>5</sup> LEEnvironmental Equity Laboratory, INRS, 2016.