



GM team *The Electrons* win first place in MIT's Energy Hackathon.

Support Carbon Pricing Efforts

The business case for renewable energy and energy efficiency projects is made more robust when we consider existing and potential costs of emitting carbon. GM uses an internal carbon price that is an average of real values in our markets to help guide our investments. These real-world prices inform both our capital expenditures and planned energy efficiency projects in our manufacturing organization.

We are exploring ways to embed carbon pricing more deeply into our organization. To this end, we participated in MIT's Energy Hackathon, challenging teams to propose a strategy for GM to meet its energy and carbon goals through an internal carbon price. The Electrons, one of the three teams that worked on GM's challenge, won first prize in the competition, and their recommendations may inform our future internal pricing approach.

Externally, we participate in carbon schemes in markets where active programs exist. When we had operations in Europe, we were active in the European Emissions Trading Scheme for more than a decade. Today, we're participating in Korea's cap-and-trade system. In this market, operational improvements uncovered during an "energy treasure hunt" allowed us to reduce emissions by 400,000 tons CO₂e. We converted these reductions into carbon credits on Korea's emissions trading market and sold them for a one-time payment of US\$8 million.

We recognize that carbon pricing solutions will vary from country to country. In the United States, we are a founding member of the Climate Leadership Council (CLC). The CLC's proposal is to put a tax on carbon that would be applied through the supply chain. While the cost would be passed through to consumers, the revenues generated by the tax would be returned to the public in the form of a dividend—a solution that makes sense to us.



New Perspectives on Energy Efficiency

Drones could be the next tool in our quest to lower energy usage in GM facilities. Pilot programs at our Global Technical Center and Milford Proving Grounds in Michigan are utilizing custom-built drones equipped with LiDAR-sensing technology and infrared thermography to monitor building heating and cooling performance. Through the technology, GM facility technicians can monitor building performance on demand and see thermal signatures to improve the efficiency of heating and air conditioning units, among others. In addition to autonomous drones, GM has deployed drones at some manufacturing facilities to collect data that would otherwise pose a risk to humans. The drones collect images from high places like rooftops and tight, confined spaces, such as pipes and paint ovens, among others. Data collected helps us plan repairs and install new equipment, for example.