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CEA files application with CRTC to improve the efficiency, reliability and security of the electrical smart grid

Ottawa (May 16, 2019) – Yesterday, the Canadian Electricity Association (CEA) made a submission to the Canadian Radio-television and Telecommunications Commission (CRTC) requesting changes to the regulatory regime for wireless communications that will enable CEA's Canadian Electrical Utility (CEU) members wholesale access to cellular networks.

The requested changes would enable CEU's to cost effectively, and reliably, build the Canadian Smart Grid, with benefits including, but not limited to;

- Optimizing the electrification of transportation,
- Further enabling the deployment of virtual power plant technology to improve grid resiliency and reduce the ecological footprint of power generation,
- Improving the integration of Distributed Energy Resources (DER) such as wind, and solar,
- Increasing grid automation to improve safety for line workers, first responders, and the public,
- Significantly improving the reliability and quality of power delivered, an essential requirement of emerging high-tech industries.

"Enabling the development of our Canadian Smart Grid is essential to the electrification of our country's economy. CEA members are eager to work with the CRTC and Canadian telecom companies to help achieve this," commented Francis Bradley, COO of the CEA. "CEA is requesting these important regulatory reforms in order to facilitate the efficient, reliable and secure operation of the emerging Smart Grid."

CEA's requested changes are important as the Smart Grid will require tens of millions of smart connected devices deployed throughout Canada's electrical grid. These devices would represent a significant increase in machine to machine communication (M2M) currently used by CEUs. In building the Smart Grid, it is essential that this M2M communication be robust, secure, reliable and cost effective.

In delivering the Smart Grid to Canadians, changes in the how CEUs are able to access Canadian

wireless telecommunication networks are necessary, and have already been implemented in countries such as the Netherlands, Australia, Italy, and Belgium.

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About the Canadian Electricity Association

Canadian Electricity Association (CEA) members generate, transmit and distribute electrical energy to industrial, commercial, residential and institutional customers across Canada every day. From vertically integrated electric utilities, independent power producers, transmission and distribution companies, to power marketers, to the manufacturers and suppliers of materials, technology and services that keep the industry running smoothly -- all are represented by this national industry association.

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Background

The most economically efficient solution for Canadian Electric Utilities to satisfy the growing need for M2M communications is to use commercial cellular in populated areas, and private LTE in remote zones. The challenge with today's commercial cellular service is that it is not reliable nor secure enough to handle the Smart Grid's mission critical activities.

For example, imagine if 100,000 people in any given Canadian city couldn't charge their electric vehicles overnight because the CEU was locked into a single cellular service provider which had an outage that made it impossible for the CEU to operate the Smart Grid. This type of a scenario is far from hypothetical, and there are already instances of this happening as reported by CBC in 2017.

CEA has been researching this issue and has determined that the most viable technical solution is to allow CEUs to access multiple cellular networks simultaneously, through negotiated contracts with telecommunications companies, so that they can switch to a functioning network should their primary network fail.

To enable this "switching" CEU need to be permitted to operate certain core network components themselves and route their data onto the carrier networks. This has the added benefit of significantly increasing security and customer privacy (both chief concerns for CEUs) because of how network keys are stored. Routing data to multiple networks can be accomplished by CEUs being granted a Mobile Network Code (MNC), which is the regulatory changes that CEA is seeking.

Cellular operators have been granted MNCs. This locks your cell phone to communicate with its home network, for instance the TELUS network, when it is available. However, when travelling abroad your phone is able to utilize available networks in the priority set by TELUS.

Similarly, the challenge with deploying private LTE systems, which are excellent because they are purpose built, robust, secure and very affordable, is that private systems also require an MNC to enable data routing between networks. CEUs could sub-contract service from an existing wireless carrier but this would not solve the reliability challenge.

For these reasons, and others highlighted in our May 15th submission, CEA on behalf of our members has requested regulatory changes to allow CEUs to hold an MNC, which is not currently permitted in Canada.

CEA urges the CRTC to enact the requested regulatory changes, which will enable CEUs to deploy the Smart Grid resulting in significant benefits to Canadians. CEA looks forward to working with the CRTC and telecommunications companies to find a path forward.