# A standard for real-time calculation of pollutant emissions allocated to the use of ICTs

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The first ever standard for real-time calculation of pollutant emissions allocated to the use of information and communication technologies (ICTs) was recently introduced, thanks to the work of the IEEE ICT Emissions Working Group Committe, chaired by Mohamed Cheriet, a Professor in the Systems Engineering Department at École de

technologie supérieure (ÉTS). Under the auspices of the IEEE Standards Association (IEEE-SA), the Working Group Committee is made up of researchers from diverse backgrounds and many different countries.

A large proportion of the pollutants generated by the use of ICTs during their life cycle are linked to their electricity consumption. The consumer is not aware of it, but the sources used to produce the electricity vary continuously over time. Electricity that is consumed in the morning may originate from a different source compared to the electricity that is consumed in the evening. In addition, some sources generate more pollutants than others.

Before this new standard was created, the main methods for calculating carbon footprints and GHG emissions left out these significant factors of time and location.

As of now, the Standard for a Method to Calculate Near Real-Time Emissions of Information and Communication Technology Infrastructure (IEEE 1922.2-2019)—approved in April 2020 by the IEEE-SA after two years of work—allows for the quantity of pollutants emitted by the use of ICTs to be calculated wherever they are located around the globe, taking into account both the electrical power source and the time of day in which they operate.

According to Mohamed Cheriet: "This standard could not have come at a better time: The use of ICTs is responsible for 4% of the greenhouse gases (GHGs) produced by human activity, which is slightly higher than the worldwide aerospace industry. In addition, even though these activities emit both GHGs and other types of pollutants, until now, there have been no official guidelines or rules that allow for the quantity of pollutants they produce to be measured in real time."

Over the medium term, this standard will allow for the ICT market to be

oriented toward cleaner technological solutions, and by extension, toward reducing the quantity of pollutants emitted. From this perspective, it is important to note that access to telecommunications, data centres and peripherals is growing at an exponential rate. By way of example, telecommunication companies are now among the world's largest energy consumers.

Provided by École de technologie supérieure