**Traction Motors and the UN Sustainable Development Goals**

As the world seeks sustainable solutions to combat climate change, much of the focus has been on the United Nations 17 Sustainable Development Goals (UN SDGs). I believe that electric mobility solutions have the potential to not only transform the transportation industry, but also to reduce greenhouse gas emissions. Specifically, traction motors will help further work toward meeting at least three of the UN SDGs.

A traction motor is an electric motor used for propulsion of a vehicle, such as locomotives, electric vehicles, and conveyor systems. Traction motors are used in electric and hybrid vehicles to replace internal combustion engines. Vehicles that are equipped with such motors offer zero-emission alternatives to conventional motors, thereby reducing environmental impacts associated with transportation systems. Within the International Electrotechnical Commission (IEC), several technical committees, subcommittees and project committees are addressing various standardization needs for traction motors, including TC 9: Electric railway equipment, TC 2: Rotating machinery, and PC 131: Rotating electrical machines for the traction of road vehicles.

**Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all (Target 7.3: double the global rate of improvement in energy efficiency)**

Unlike internal combustion engines, electric traction motors do not waste a substantial amount of energy through heat loss, as they convert electric energy into mechanical energy to propel vehicles. This improvement in efficiency aligns with SDG target 7.3 by reducing overall energy consumption per mile traveled, lowering greenhouse gas emissions and enhancing sustainability of transportation systems. Additionally, utilizing traction motors beyond road vehicles with further allow reduction of energy consumption in industrial application (conveyers), agriculture (farm equipment), and many other applications.

**Goal 9: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (Target 9.1: develop quality, reliable, sustainable and resilient infrastructure; and Target 9.2: promote inclusive and sustainable industrialization)**

By definition, traction motors represent a more sustainable transportation infrastructure and support SDG target 9.1. Additionally, traction motors can be less dependent on finite resources (such as fossil fuels), thereby being more resilient to climate impacts.

**Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable (Target 11.2: provide access to safe, affordable, accessible and sustainable transport systems)**

Traction motors can play a critical role in improving sustainability of transportation systems. Traction motors offer cleaner and quieter transportation options, contributing to enhanced mobility and reduced air pollution.

While there are other areas within the UN SDGs where traction motors might be mentioned, including in increasing demand for renewable energy to future reduce greenhouse gas emissions, addressing all of these areas would require me to write a book! However, it is clear that traction motors can play an integral part in advancing the UN SDGs related to energy efficiency, infrastructure sustainability and resilience, and urbanization. Facilitating the transition to electric in the transportation sector will require that the appropriate standards be developed to support such a transition, and it is critical that these standards be international. Allowing companies to design one product for the global market will speed adoption and thereby speed achievement of the UN SDGs.

As the USNC Secretary for the Technical Advisory Group to PC 131, I had the opportunity to attend the first PC 131 meeting in Vienna, Austria in April 2024. I am excited to continue to work with US stakeholders to develop meaningful input into the standardization of traction motors, and to learn more about the IEC system and how ensuring global harmonization of standards can lead to a more sustainable world.