

This abstract will be presented during LNG2023 conference on 10-13 July in Vancouver, Canada among many other innovative projects, ideas and outlooks. LNG2023 will provide a unique platform for the global LNG industry and key stakeholders to discuss, debate, and showcase the latest industry developments and opportunities.



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ENSURING ELECTRICAL STABILITY AND RELIABILITY OF ELNG PLANTS

eLNG continues to emerge as powerful decarbonization pathway for LNG project stakeholders. However, the development of eLNG facilities presents challenges not encountered with traditional gas turbine-driven designs.

In particular, steps need to be taken early in the design of the electrical system to prevent voltage dips and trips under all operating scenarios. This can be complex due to the presence of harmonic sources in the system caused by the large electrical motors/VFDs driving refrigeration trains.

This presentation/paper will address these concerns by describing (in layman's terms) how harmonics are created within the electro-mechanical system and their effects on the stability and reliability of an eLNG plant's electrical system. The presentation will outline proven strategies which have been successfully applied to eLNG facilities, as well as other industrial applications with far more challenging conditions (e.g., arc furnaces, HVDC, etc.). Experience gained in these industries by Siemens Energy is currently being applied on the Woodfibre LNG project in Canada.

The presentation will also discuss the importance of involving the drive train OEM in power studies during the FEED phase. This is somewhat unconventional, as the responsibility typically falls on the EPC. However, because the design and configuration of equipment (i.e., main refrigeration compressors) will impact electrical system stability and reliability, it should be considered.

To view the full conference agenda, visit <https://www.lng2023.org/lng-programme-overview>