



414 Nicollet Mall
Minneapolis, MN 55401

March 4, 2021

— Sent Via E-Mail —

The Honorable Torrey Westrom
Minnesota Senate
3201 Minnesota Senate Building
St. Paul, MN 55155

RE: SF 1030 -- AMMONIA PRODUCTION PILOT RESEARCH AND
DEMONSTRATION PROJECT

Dear Senator Westrom:

Thank you for the opportunity to comment on the University of Minnesota – Morris (UMN) project that is the subject of SF 1030. Xcel Energy believes this project holds great promise in the transition to the carbon-free production of electric energy, reduction of greenhouse gas (GHG) emissions from natural gas use, and multiple other potential applications of hydrogen-based fuels in industry, transportation and agriculture.

With regard to electricity, Xcel Energy's goal of being carbon-free by 2050 relies, in part, on a significant addition of wind and solar energy to our system. Because wind and solar are intermittent resources varying throughout the day and year, we recognize the challenges of grid-integration and the need for large-scale, seasonal storage of energy. While batteries will be a key technology for short-term energy storage, the much longer shortfalls in renewable generation we have recently experienced during polar vortex periods point for the need for economical long-duration energy storage – for which hydrogen and ammonia are promising options. We believe the research conducted at UMN may lead to significant energy storage solutions, perhaps sooner and at a lower cost than battery storage technology. With regard to natural gas use in buildings and industry, we are currently exploring solutions to lower GHG emissions throughout the natural gas supply chain. Hydrogen-based fuels could also offer promise here, through either blending in the existing natural gas distribution system or dedicated use in industry.

UMN is a global leader in this field, developing technologies with significant potential to help Xcel Energy transition to carbon-free energy by 2050. We are proud that a Minnesota institution is leading the way on this important research and encourage the Senate to join us in supporting this project.

Sincerely,

A handwritten signature in blue ink that reads 'Chris Clark'.

Christopher B. Clark
President