SANBORN HEAD

Green Hydrogen Generation Pilot

ESSEX JUNCTION, VT | VERMONT GAS SYSTEMS



Sanborn Head has been working with Vermont Gas Systems (VGS), in partnership with GlobalFoundries (GF), to develop a green hydrogen pilot project at GF's semiconductor manufacturing facility located in Essex Junction, VT. The project will provide a new hydrogen generation and storage facility, hydrogen distribution system, and hydrogen and natural gas blending system.

Key Components:

- Process uses Renewable Energy Sources
- Hydrogen Fuel Production
- Zero Carbon Thermal Energy
- Carbon Emission Reduction by displacement of Natural Gas

The new systems will reduce the need for natural gas by injecting hydrogen into GF's existing fuel gas supply infrastructure to reduce the carbon content of fuel gas used for combustion to meet on-site heat loads. The project demonstrates the value and accessibility of renewable fuel and how it can supersede existing fossil fuels, which is critical to reducing carbon emissions and climate change.

Sanborn Head prepared an engineering study to document the research, project configuration evaluations, data analysis, calculations, pilot project specifications, and opinion of probable construction cost. Specific evaluations included identification of hydrogen storage volumes to balance cyclical peak production capability with varying seasonal base load demands; comparison of high pressure and low-pressure storage systems, comparison of electrolyzers of varying capacities; comparison of hydrogen generation facility siting options; and evaluating the siting options for compliance with applicable codes and standards.

Since the completion of this work, Sanborn Head has been retained by Vermont Gas Systems as owner's engineer to write a Request for Proposal and evaluate competitive bid responses from multiple EPC contractors.

Related People

Seth Soos, PE
Senior Vice President

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