

## Application Notes

# eLNG for large-scale liquefaction facilities

When natural gas needs to be transported over long distances, the most economical solution is to liquefy the gas, since liquefied natural gas (LNG) occupies 1/600th the volume of its gaseous state. Since some markets are willing to pay a premium for natural gas, it becomes even more important for gas producers to be able to move gas from low price markets to high price markets.

LNG liquefaction facility owners and developers have many different decisions to make in terms of equipment and technology selection. This is especially true when it comes to refrigeration compression trains, where reliability and availability are key. Traditionally, owners have opted for gas turbines to drive these trains, but an all-electric LNG (eLNG) solution is a superior alternative in many areas.

### **Environmental regulations threaten projects**

Some areas are more restrictive on environmental regulations and emissions than others. Using gas turbines for refrigeration

trains may make obtaining the necessary permits difficult, thus threatening the viability of the project.

### **High costs and thin margins pressure operators**

Constructing a large-scale LNG liquefaction facility requires a significant investment, with returns being relatively poor compared to other segments of the industry. It then becomes the goal of every facility owner to achieve the desired liquefaction capacity while keeping capital expenditures low.

### **Efficient, reliable equipment and risk mitigation**

When investing billions of dollars in a liquefaction facility, the facility owner is taking on a significant amount of risk. To mitigate this risk, facility owners need the refrigeration equipment to have proven technologies. They need it to be as efficient and reliable as possible, since more LNG produced and shipped means more profits on the bottom line. Any outage, whether planned and unplanned, significantly cuts into this profitability.

## Making things right

### Zero greenhouse gas emissions

An all-electric LNG refrigeration solution has zero greenhouse gas emissions, making it a very environmentally friendly solution. This supports many operators' sustainability initiatives, and may help offset emissions in other areas.

### Get more for less

When external power is readily available, an Integrated Drive System is significantly less expensive than a similar gas turbine solution, not only in capital expenditures, but in operating costs as well. In many cases, an eLNG solution may have double the efficiency with lower initial cost, enabling operators to liquefy more gas for every operating dollar.

### Work together for better productivity

Siemens Integrated Drive System components are engineered and harmonized to work together from the earliest days of a project. This delivers an optimal solution that drives productivity like never before. In addition, with all components coming from Siemens, maintenance and upkeep are greatly simplified, keeping the LNG plant up and running and profits flowing.

## Proven success

Siemens motors have the only successful all-electric large-scale LNG reference facility in the world. Furthermore, at 65 MW, Siemens has the largest installed and operating electric motors in the oil and gas industry, so we have the expertise and experience to minimize your risk and maximize your return.



Siemens Industry, Inc.  
3333 Old Milton Parkway  
Alpharetta, GA 30005  
1-800-241-4453

[info.us@siemens.com](mailto:info.us@siemens.com)

[www.usa.siemens.com/ids](http://www.usa.siemens.com/ids)

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