Pumps in the oil and gas industry

Whether it’s for an upstream drilling site, an LNG export terminal, or a crude oil pipeline, pumps are widely used throughout the oil and gas industry. By converting mechanical energy, pumps are used to accelerate and transport fluids from one location or process to another, with pump size being proportional to the volume being moved. Traditionally, these pumps have been driven by fixed speed electric motors. However, pumps driven by a variable speed electric motor drive system have proven to be a better option in most cases.

In today’s fast-paced and complex world, pump users face many challenges with their pump’s drivers.

Maximizing equipment operation lifetime
Operating a pump with a fixed speed motor can put significant mechanical and electrical stress on the entire drive train. Over time, these stresses will lead to failure of the equipment, requiring significant repair or replacement. In order to maximize the return on their investment, pump owners and operators need to keep their pump equipment running for as long as possible.

Keeping operating and maintenance costs low
The construction of oil and gas infrastructure is a significant investment in the eyes of an oil and gas company. If equipment is not running at the best efficiency, this cuts into profits and delays the payback period of the project. Furthermore, equipment that is not functioning due to frequent outages (planned or unplanned) results in even more financial losses.

Drive failure
Even when an electric variable speed drive system is used as a pump driver, a catastrophic drive failure can bring down the pump application, and possibly even the entire facility. Keeping an electrically driven pump online is critical to achieving maximum profitability.
Making things right with Siemens Integrated Drive Systems

Reduce equipment stress and extend pump lifetime
A pump driven by a variable speed drive system minimizes the electrical and mechanical stresses, decreasing the likelihood of failure, and increasing its life of operation.

Minimize OPEX and service costs
Due to reduction of stress on the drive train, planned and unplanned outages are minimized with an electric variable speed drive systems. Electric variable speed drive systems are more efficient in their operation as well, since they provide the user with broader and more accurate speed control. This minimizes OPEX and improves profitability.

Reduce electric drive shutdowns
Electric drive failures can happen, but don’t need to bring down the entire pump and facility. With the patented cell bypass technology included in Siemens Perfect Harmony products, these drives can continue functioning even if a few cells were to fail. Integrated Drive Systems with Siemens Perfect Harmony drives help maximize existing equipment’s uptime.