The competitive nature of the oil and gas industry demands organizations continually improve their operations to maintain profitability. To that end, it is critical to evaluate legacy process control systems that can lead to reduced output or downtime. That’s why companies are specifying “intelligent production technology” in system upgrades. **PowerFlex drives with TotalFORCE technology** may be the best solution. The drives include optional configurations that provide harmonic mitigation, regeneration and common bus solutions that add process control flexibility and efficiency. Plus, many features that boost productivity and peace of mind.

### Solutions for today’s productivity challenges

TotalFORCE technology in the PowerFlex 755T drive family provides solutions to meet three of the biggest challenges for oil and gas companies.

#### Reliability and Uptime
Better safe than sorry. The real-time predictive analytics features are essential to increase uptime and productivity. The smart system notifies operators of compromised drive or motor health – heat, blown fuses, component runtime hours, etc. Plus, it provides critical equipment replacement alerts to prompt maintenance or upgrades.

#### Harmonic Mitigation
PowerFlex drives can provide built-in harmonic mitigation and power factor correction through available active front end technology. By reducing harmonic distortion, they help improve energy efficiency, reduce energy costs and minimize power distribution issues. IEEE 519 compliant (<3...5% THD).

#### Reduce Operating Cost
Energy-efficient drives can reduce electric power use up to 40%. Using built-in regeneration, PowerFlex 755TR drives can reduce energy consumption further by putting energy back to the incoming power supply. This is far more efficient than resistive or mechanical braking. It also eliminates braking resistors and cooling equipment, wiring, labor, installation and maintenance costs.
The PowerFlex drive was the best solution

An international customer needed a new drive solution. The company that supplied energy had new requirements – to use a VFD due to starting current. After an internal analysis, the company concluded that an active filter would be the best option.

Rockwell Automation proposed three solutions: an active filter, a passive filter and a PowerFlex 755TL drive. The customer asked to compare:

- Difference in costs
- Harmonic analysis
- The physical size

Due to the size, cost and space optimization within the E-house, the PowerFlex 755TL drive was selected. It provided 50% greater space savings versus a traditional solution. Plus, the drive offered better control and protection of the motor/pump arrangement and predictive maintenance.

Main applications in the oil and gas industry

PowerFlex drives with TotalFORCE technology deliver great performance when applied to two critical applications in the industry: pumps and compressors.

- PowerFlex VFDs offer an ideal solution for pump control. They provide the possibility of returning energy back to the system (regeneration), thanks to the active front end. Plus, with predictive analytics, equipment performance data and maintenance alerts help avoid downtime. This technology works on both centrifugal and positive displacement pumps with various subtypes.
- For compressors, PowerFlex drive systems can be designed to support all types of redundancy and for ease of maintenance. And it is commonly used with rotary (blowers or centrifugal) and reciprocating compressors.

Offering continuous and stable operation with energy-efficient consumption (and possible regeneration), PowerFlex drives can reduce electric power use up to 40%.
Applications where PowerFlex drives with TotalFORCE technology make a difference

ELECTRO-SUBMERSIBLE PUMPS
These pumps are susceptible to failures caused by sand, electrical spikes and frequent on-off transitions. Thanks to a soft start, PowerFlex drives help avoid these potential problems and protect the motor-pump combination. They can control the flow by adjusting the frequency and optimizing the energy use of the system. The active front end preserves the harmonic content, and predictive maintenance helps prevent unplanned downtime.

PROGRESSIVE CAVITY PUMPS
The underground mechanical train of these pumps is under great stress, especially in situations of start and stop. PowerFlex drives offer an ideal solution for controlling these pumps with soft start, active front end, predictive maintenance and adaptive control.

PLUNGER OR SUCKER ROD PUMPS
The main threats to these pumps are the severe knocking of the plunger with high sand content fluid or low bottom pressure from the well. One of the most common challenges with VFDs is the shortage of oil in the well, which cannot be pumped/extracted and needs time to replenish. Given this, the active front of the PowerFlex drives provides a quick speed adjustment, with the possibility of returning energy to the system during deceleration.

COMPRESSORS
Under certain conditions of flow, compressors experience sudden changes in the load of the whole system. So, they require an immediate reaction to avoid vibration or resonance problems during the operation. TotalFORCE technology provides the necessary torque for challenging loads. Plus, they deliver active front end, predictive analytics and adaptive control.

Turn manufacturing into a strategic advantage
Leverage PowerFlex drives to help reach your energy savings and sustainability goals. These solutions are designed to maximize motor efficiency, reduce energy use and improve application performance.

For information about PowerFlex 755TS, 755TL, 755TR, 755TM and 8000T drives with TotalFORCE technology, speak with your local Rockwell Automation sales representative or click to connect or learn more.