

# Industrial Pump Variable Frequency Drive Controls

## Situation Overview

Industrial process pumps account for significant energy use and costs. Installing a variable frequency drive that synchronizes pump motor speed to match demand can increase pump efficiency and result in substantial energy and money savings.

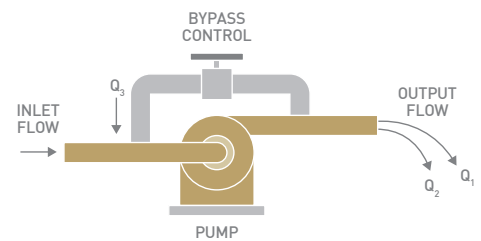
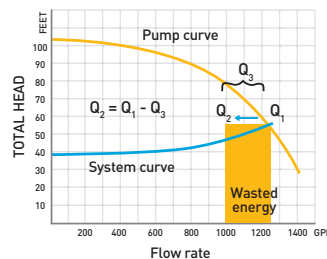
The most appropriate systems for variable frequency drives typically have:

- Pumps that operate long hours (>2000 hours/year)
- Fluid flow or pressure that varies over time
- Pumps that are oversized for the application

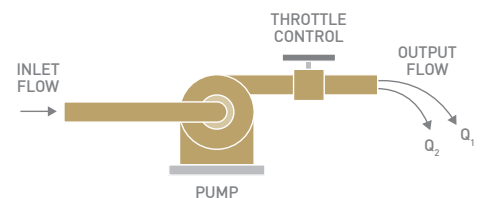
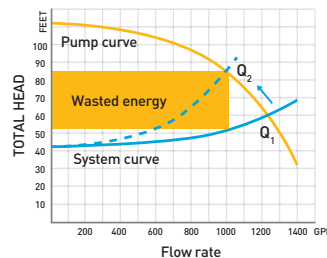
## Application and Benefits

Adding variable frequency drive (VFD) controls yields immediate and long-term benefits in these common scenarios:

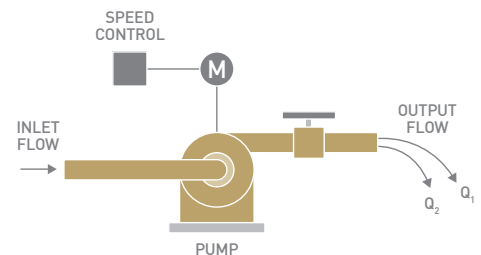
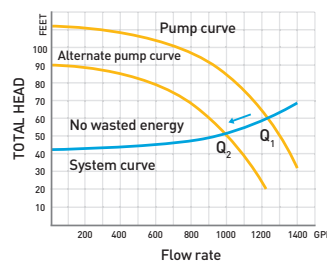
**The existing control system consists of throttling or bypass valves.** This process uses excessive energy and may create punishing conditions for mechanical equipment. **VFDs enable pumps to match varying demand—conserving energy and extending equipment life.**



**The existing pump exceeds flow and pressure system demands.** Oversized pumps waste energy and overburden associated systems. **VFDs can automatically throttle the pump to work at a lower, fixed speed.**



**The existing pump cannot modulate its speed.** Simple on/off controls limit the pump to working either at maximum speed or not at all. **VFD controls can modulate pump speed and power, an advantage during a demand response event.**



## Industrial Pump Variable Frequency Drive (VFD) Controls

### PG&E Incentives and Assistance

#### Incentives for continued energy efficiency

These involve cash payments based on peak demand (kW) and annual energy (kWh) savings actually achieved. For an industrial VFD pump project, the customized incentive rate is currently:

- \$150 per peak period kW reduction
- \$0.08 per annual kWh reduction

PG&E is available to provide complete guidance through the application process to ensure your incentive potential is maximized.

### For More Information

**Visit**  
[pge.com/industrial](http://pge.com/industrial)

**Email**  
[IndustrialEnergySavingsPrograms@pge.com](mailto:IndustrialEnergySavingsPrograms@pge.com)

**Call**  
1-800-468-4743



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