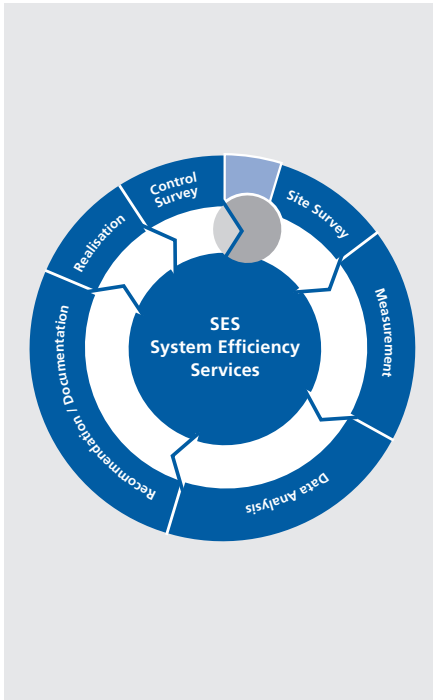


System Operation Made Transparent: SES System Efficiency Services



Increase in profitability of pump systems through comprehensive systems analysis

The main cost factors of equipment include not only repair and maintenance but also energy expenses, which may turn out to be rather high, if systems are operated under off-design conditions. But as an operator you naturally expect a high degree of availability from your system with the lowest possible costs.

Our “System Efficiency Services” provide opportunities for more energy efficient operation of your pump systems with prolonged life. This offering also helps you tackle the challenges posed by the current regulations aimed at reducing CO₂ emissions and by steadily rising energy prices.

Regardless of the field of application – be it Energy, Industry, Water or Waste Water – the actual load profile of the pump is recorded as part of a comprehensive systems analysis and compared with the design conditions. Potential savings can thus be identified (energy efficiency analysis) and the causes of any damage detected (damage analysis).

In situ measurement by means of a data logger records process and vibration variables to determine the operating characteristics of the pump. Using mobile performance measurements in the control cabinet, the effective power of the pump can be determined regardless of where it is located.

Process variables to EN ISO 9906

- Pressure
- Temperature
- Power
- Flow rate
- Rotational frequency

Vibration measurement to DIN ISO 10816-7

- Vibration velocity
- Frequency analysis

Contact

KSB Canada Service
Gary Zeidler
Tel. +905 568-9200
E-mail: gzeidler@ksbcanada.com

SES System Efficiency Services at a glance



Costs saved by SES	Pump 1	Pump 2
Energy costs per annum prior to optimisation	\$17,634	\$19,676
Energy costs per annum for both new pumps	\$13,441	\$13,565
Savings per annum	\$4,194	\$6,110
Costs for two new pumps	\$21,120	
Payback period	2 years	

Waste water pumping station

The aim was to determine the cause of extreme pump vibration, which had repeatedly led to pump failure. The submersible motor pumps serve to transport waste water from an inlet tank.

Outcome of SES System Efficiency Services

- Connection detected between the fill level in the inlet tank and the vibration excitation – Result: severe damage to the bearing bracket of the pump caused by gas being transported with the fluid in the intake area
- Installation of a curtain wall in the inlet tank to separate any entrained gas improved pipe fastening and increased submergence in the inlet tank.



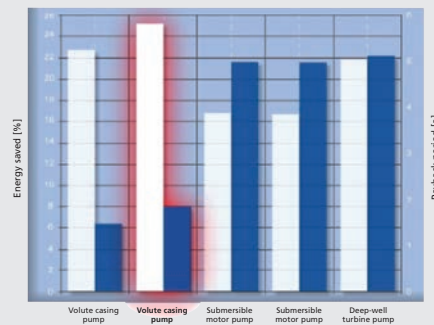
Costs saved by SES	
Energy costs per annum prior to optimisation	\$59,681
Energy costs per annum using speed control	\$44,544
Savings per annum	\$15,106
Costs for two new pump sets	\$27,866
Payback period	1.84 years
Energy saved	100,000 kWh
Reduction of CO ₂ emissions	62 tonnes

Cooling water circuit of a chemical plant

Energy savings of more than 20 percent result from increasing the energy efficiency of cooling water pumps. These tubular casing pumps circulate cooling water in a closed circuit.

Outcome of SES System Efficiency Services

- Time of operation at specific operating points: 90 percent of the operating time the operating point of the cooling water pump is at 300 m³/h, only 10 percent of the time fire-fighting operation is required at 400 m³/h
- Use of two fully redundant pumps with enhanced efficiency



KSB Pumps Inc.
 5205 Tomken Road
 L4W 3N8, Mississauga, Ontario
 info@ksbcana.com · www.ksb.ca