

SiemensIndustrialServices



Energy Optimization of Drive Systems: Our Service Package for Reducing Your Energy Costs.

Your Success is Our Goal

SIEMENS

Industrial Solutions and Services

We identify inefficient electrical drive systems, develop an optimization concept, and implement technical improvements. The result: you save energy – and money.

Many drive systems generate unnecessary energy costs

Electrical energy is one of the most important production and cost factors. The Kyoto Protocol, for its part, has given impetus to new laws embodying very strict environmental regulations. Still, far too much energy continues to be wasted today. In Germany alone, savings potential is currently placed at 20 TWh, which translates into some EUR 1.5 billion of unnecessary energy costs each year.

More than two-thirds of electric power in industry is consumed by drive systems. Independent studies have shown that approximately 30% of all electrical drives can be run more efficiently, enabling energy savings of up to 50% under optimal operating conditions. Machines with a comparatively high saving potential include pumps, fans, compressors, conveyors, blending and grinding mills, and extruders.

Our solution: Energy Optimization of Drive Systems

Two conditions must be fulfilled for the optimization of your drive systems to be worth your while. They are:

1. Specialists must possess optimization expertise with regard to the evaluation of savings potential, the selection of drive systems at your company, and the development and technical implementation of economical optimization measures.



2. High-quality and highly-efficient electrical components must be used, as low-consumption motors and frequency converters.

We meet both requirements – by using motors and frequency converters from Siemens and by making available the optimization expertise of a world-class provider of technical services.

Optimization of energy consumption takes place in three steps:

- Step 1: Estimate of potential
- Step 2: Energy analysis
- Step 3: Technical implementation

The result:

You avoid unnecessary energy costs.

Reliably ... and without capital-intensive investment.

Our energy optimization service package focuses mainly on those systems that show potential for repaying the costs of the optimization program over no more than a two-year period. We rely primarily on electronic speed controllers instead of mechanical throttles. A further measure involves the use of energy-saving motors, which pay for their higher initial costs very quickly through lower operating costs. To tap directly into the savings potential at your site, we have developed a standardized, three-step optimization concept.

Step 1: Estimate of potential

Phase 1 involves using checklists and approximation techniques to evaluate the theoretical energy savings potential based on motor technical data. The basis for calculation, including the nominal output, type of control, number of poles, average electricity price, operating hours of the motor as well as the desired pay back period, are agreed upon in advance. Calculation of your theoretical annual savings potential is done on the basis of the consumption values of your components and our experience in implementing optimization measures. If the approximation reveals theoretical savings potential, then we make you a concrete offer for an onsite energy analysis of all of your drive systems.

Step 2: Energy analysis

The results of the potential estimate are then verified by our drive specialists. Drive systems that appear suitable from a technical and economic standpoint are identified, and the energy cost reduction potential is determined. A cost/benefit analysis that takes into account your particular technical requirements serves as the basis for a concrete optimization concept, which covers:

- Analysis of throttle or bypass controllers
- Measurement/snapshot of energy consumption of drive systems
- Examination of the technical and economic feasibility of achieving required process performance
- Documentation in an energy savings protocol
- Selection of electrical components
- Action plan for technical realization
- Cost estimate for engineering, materials, installation, and commissioning

Step 3: Technical implementation

Technical and organizational implementation of the optimization measures on selected drive systems follows within the framework of a performance-based contract. This agreement includes:

- Project management, planning and engineering that takes specific customer processes and equipment into account
- Installation/assembly of frequency converters
- Replacement of obsolete or inefficient technology
- Commissioning and parameterization of components
- Optimization of operating hours and loading
- Final measurements, determination of energy consumption

Benefits that pay big dividends:

- Identification of inefficient drive systems
- Short pay back period
- Individual optimization concept with technical measures to reduce energy consumption
- Free approximation of potential
- If no significant savings potential has been identified, the analysis will be at no costs
- If savings potential has been identified, costs for the analysis will be applied against the implementation contract with Siemens
- Investment security through performance-based contract for technical implementation
- Significant and sustained reduction of power consumption, energy costs, and environmental impact



Take advantage of our energy optimization service package to reduce your drive system energy costs – without capital-intensive investment.



Siemens Aktiengesellschaft
 Industrial Solutions and Services
 OnCall-, LogisticsService,
 Maintenance
 I&S IS OLM
 P.O. Box 3220
 91050 Erlangen, Germany
 E-mail: simain@siemens.com
<http://www.siemens.de/simain>

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