



# STEAG Energy Services

Introducing the Plant Services Division

[www.steag-energyservices.com](http://www.steag-energyservices.com)

**steag**





## **Plant Services**

### **Operation and Maintenance**

From advisory assistance to the fully responsible long-term management of operation, including optimized maintenance.

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### **Training**

Training for the various technical departments of the power plant and the power plant organization, including basic training, management training, training in simulators and training on the job.

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### **Testing Services**

Proof of guaranteed performance data and assessment of individual plant components, performance of control and acceptance measurements, cleaning, regeneration and bench reactor testing of SCR DeNO<sub>x</sub> catalysts as well as catalyst management.

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### **HR Services by OPUS**

Provision and placement of qualified employees, qualification measures and further training for customer employees.

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# Power plant services from one source

A power plant is a complex network consisting of many systems, areas and departments, all of which have to contribute substantially to the successful operation of the plant. Particularly in times of an increase in global demand for electricity with limited primary energy resources, it is important to operate a power plant at its economic optimum in order to supply people the energy they need – around the clock.

Plant Services is well positioned to master these complex tasks. To preserve and enhance the availability and efficiency of power plants around the globe we offer advisory support, optimized maintenance, provide professional personnel and even take charge of the operational management on a long-term basis in the framework of comprehensive O&M service contracts for power plants. In this case the operating crew usually consists of experienced STEAG experts and locally recruited staff.

International education and training for power plant personnel, both as part of our O&M activities and for other operators, is provided by our Training Department on the basis of customized programs.

To assist in commissioning for the purpose of acceptance measurements or for supervision and control of plants of all kinds, our Testing Services Department is equipped with an inspection body/testing laboratory accredited to DIN EN

ISO 17020 and 17025. Our inspection body has an extensive portfolio of various measuring techniques for a wide range of processes. The evaluation of the results of measurement and testing in the course of inspection activities contributes significantly to the optimization of power plant operation. Longstanding experience with measurements in power plants both of STEAG and third parties ensures verifiable evaluation of the measured data, which then provides the basis for any action which may be necessary.

Without well-trained, motivated employees, no power plant can be managed safely, effectively and economically. This is why our OPUS HR services unit also offers qualified, optimally trained staff for the power generation industry.

The pooling of all these services in one source, combined with the background of several decades of successful operational management, is a guarantee of success both for current projects and those under development.



# STEAG know-how for power plants

The success of long-term investments tied up in power plants can be assured in the long run solely by competent operation and maintenance.

For this, O&M offers you its services and experience: from advisory support all the way to taking full charge of the power plant operation. In addition, O&M's competences include spare parts management and risk management. Our effective operational management is supported by STEAG

software from the System Technologies Division, specifically designed to optimize the economics of power plant operation. With internationally experienced employees and technical support from the headquarters and from STEAG's own power plants, we make your O&M projects a success.



In Chile, we supported the Chilean power producer Colbun S.A. in the commissioning of the newly built coal-fired power plant Santa Maria I and during the operation in issues relating to operation and maintenance.

### **Cost management and budget control**

Our O&M specialists are able to efficiently operate and maintain power plants that use a variety of fuels, as well as related industrial facilities, on a long term basis and under benchmarking aspects. The commercial success of numerous power plants operated under our responsibility, at home and

abroad, often over many years, is proof of this. We reduce operational costs by means of a consistent cost management in order to achieve ambitious goals. For instance, we manage budget control, optimize the procurement of spare parts, plan inspections and maintenance measures effectively, with minimum costs and optimized in time.





### Customized Training

<b>Target groups:</b>	• Trainees	• Junior professionals	• Specialists	• Executives
<b>Training methods:</b>	• Classroom • Equipment Training	• Workshop	• Simulator	• On-the-job
<b>Occupational fields:</b>	• Management • Business Administration	• Maintenance • Health, Safety, Environment	• Operation	• Laboratory
<b>Power plant technology for various sources of energy:</b>	• Coal • Biomass	• Gas/oil • Solar	• Special fuels • Wind	



A Brazilian training group at our Walsum power plant.

## We pass on our know-how

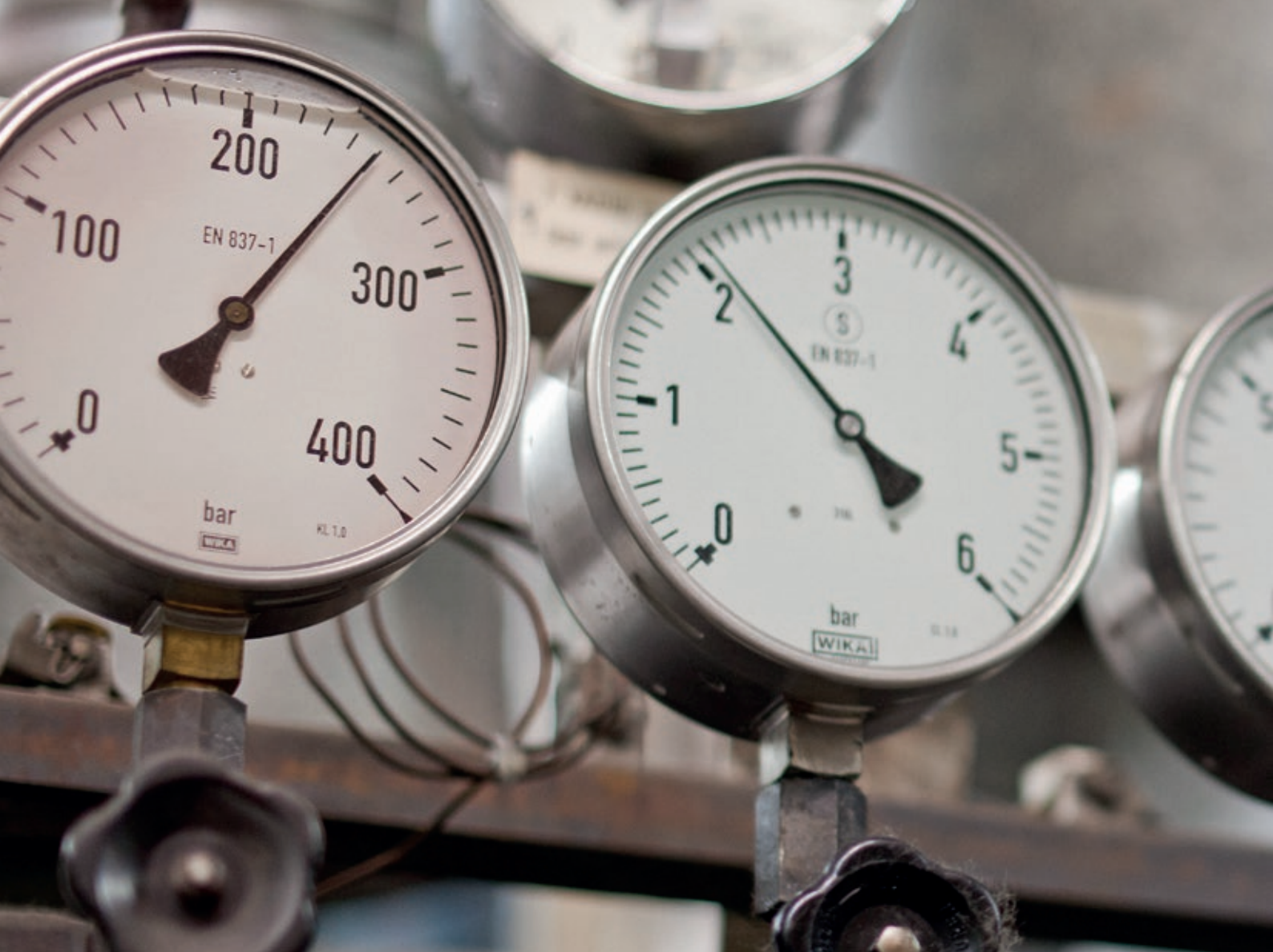
STEAG Energy Services GmbH has longstanding international experience in the training of its own operating personnel as well as the personnel of external power plant operators.

In this way we make an important contribution to the safe, environment-friendly, economical management and operation of power plants and systems by well-trained, skilled employees. In addition, we assist in building up regional training centers for typical power plant occupations so that the supply of qualified junior staff is ensured in the long term.

### **Worldwide training of power plant personnel**

The training programs are individually adapted to the particular needs and wishes of the customers and conducted worldwide at STEAG or customer locations. Our staff of instructors boasts decades of experience in implementing programs for specific target groups and specific technologies with appropriate training methods and exercises.





# Measuring and understanding data

A prerequisite for the commercial operation of any power plant is the proof of the guaranteed performance data. This proof is usually provided by an independent third party using special, extremely accurate measuring equipment.

In the course of operation, on the other hand, each plant is subjected to wear and tear during its lifetime so that, in the simplest case, adjustments and readjustments as well as maintenance works of differing scopes become necessary. In the case of extensive inspection work on major components like tur-

bines, feed pumps and fans it makes sense to record characteristic data with highly accurate measuring equipment before and after maintenance work in order to be able to furnish proof of the quality of the maintenance measures. Adjustment work is also based on measurements obtained parallel to operation – however,

the operating data available from the I&C system is often not sufficient for this purpose.

Fouling also reduces the efficiency of plant parts. Here, too, it is expedient to identify the level of fouling or verify the success of cleaning work by appropriate measurements.





Due to changes in statutory requirements, changes of process parameters or optimization measures, modifications or retrofits in plant sections become necessary. The prerequisite for such works and the basis of further planning is always a detailed determination of the plant condition – as a rule through corresponding measurements, which also serve to validate complex calculations.

Testing Services performs measurements for all these applications. Thirty years of experience from projects in STEAG's own power plants, as well as for numerous external cus-

tomers, and the accreditation as a testing laboratory and inspection body according to DIN EN ISO/IEC 17020 and 17025 by the German accrediting body DAkkS, are crucial success factors in this regard.

**The DeNO<sub>x</sub> catalyst services of STEAG Energy Services GmbH for Europe are also bundled in Testing Services.**

**They include:**

- Reactor inspection and catalyst sampling
- Catalyst tests in a bench reactor and chemical analysis

- Cleaning or regeneration of deactivated catalysts
- Performance of NO<sub>x</sub> distribution measurements in flue gas ducts (including adjustment of the NH<sub>3</sub> injection grid if required)
- Preparation of status reports (including residual lifetime forecast and catalyst replacement concept) for DeNO<sub>x</sub> reactors.

By means of this extensive catalyst management the operator is regularly informed about the condition of his catalysts, and investments in new catalysts can be reduced by initiating regeneration at an early stage.







# Flexible manpower solutions

Since the beginning of 2009, OPUS Personaldienstleistungen GmbH has belonged to STEAG Energy Services. As a human resources service provider, OPUS has been advising customers from the energy sector, the plant engineering industry and related sectors throughout Germany since 1995.

OPUS provides professional personnel services involving the placement or temporary deployment of well-trained power plant personnel, technicians and engineers. The size of your company doesn't make a difference.

It is one thing to develop flexible manpower solutions – combining them into a complete offering based on partnership is the bottomline. For this purpose, OPUS holds a license under the German Temporary Employment Act.

Today the tasks of a personnel services provider are diverse and complex. We know the meaning of perfect job management.

We would like to convince you of our expertise. Contact us or visit our website ([www.opus-personal.de](http://www.opus-personal.de)).



**OPUS supports you in every respect:**

- with qualified personnel
- with individual manpower solutions
- with continued professional development

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