



THE POWER OF ELECTRIFYING IDEAS.



SCHNIEWINDT
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Innovation, quality and independence are the key success factors of Schniewindt GmbH & Co. KG. The medium-sized company has matched the pulse of time ever since 1829 and keeps wresting market edge from its know-how leadership in electrical heating and high-tension resistance technology.

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POWER TO HEAT

POWER-TO-HEAT SUCCESSFULLY MERGED INTO THE KEYSTONE TOPIC OF RENEWABLE ENERGY.

Renewable energy sources covered some 26 percent of Germany's power needs in 2014. This quota is expected to expand to an overall 80% within the next 35 years.

Due to the influence of weather conditions on power generation from renewables, mainly photovoltaics or wind turbines, major fluctuations in energy production are unavoidable. Since many coal- or gas-burning cogeneration plants feed their process heat into district heating networks, they cannot be disconnected from the grid even when they produce excess electricity. Measures to maintain grid stability therefore include switching off wind power plants.

Power-to-Heat is a building block that can be usefully deployed to keep the grid stable and reduce CO₂ output. In times of excess power production,

PtH plants convert the surplus current into heating energy that is fed into district heating networks.

This allows conventional power plants and cogeneration plants to be shut off completely. In addition, the fast control speed of PtH plants predestines them to participate in the negative electricity balancing market. Our CSN® high-performance continuous-flow heaters are extremely suitable for use in such Power-to-Heat plants.

Electrical heating systems have been our daily challenge for decades and we now have the experience and know-how to build plants with capacities ranging from a few Kilowatt to over 20 Megawatt.

Turn your Power-to-Heat project into our task, because our mission statement has a sound foundation: "The Power of Electrifying Ideas".

OUR COMPETENCE:

- Consultation
- Engineering
- Design including thermodynamic calculations
- Production and installation of continuous-flow heaters and flange heaters up to 20 MW
- Production and installation of screw-in heaters (home technology) for decentral systems in the performance range below 100 kW
- Ultra-modern control/visualisation technology
- Switchgear
- Installation and commissioning
- Documentation

Our broad range enables us to support your Power to Heat project from the basic idea to commissioning.

PROJECT-ORIENTED SOLUTIONS BY

**THE POWER OF
ELECTRIFYING IDEAS**

POWER TO HEAT **DISTRICT HEATING**

THE SITUATION

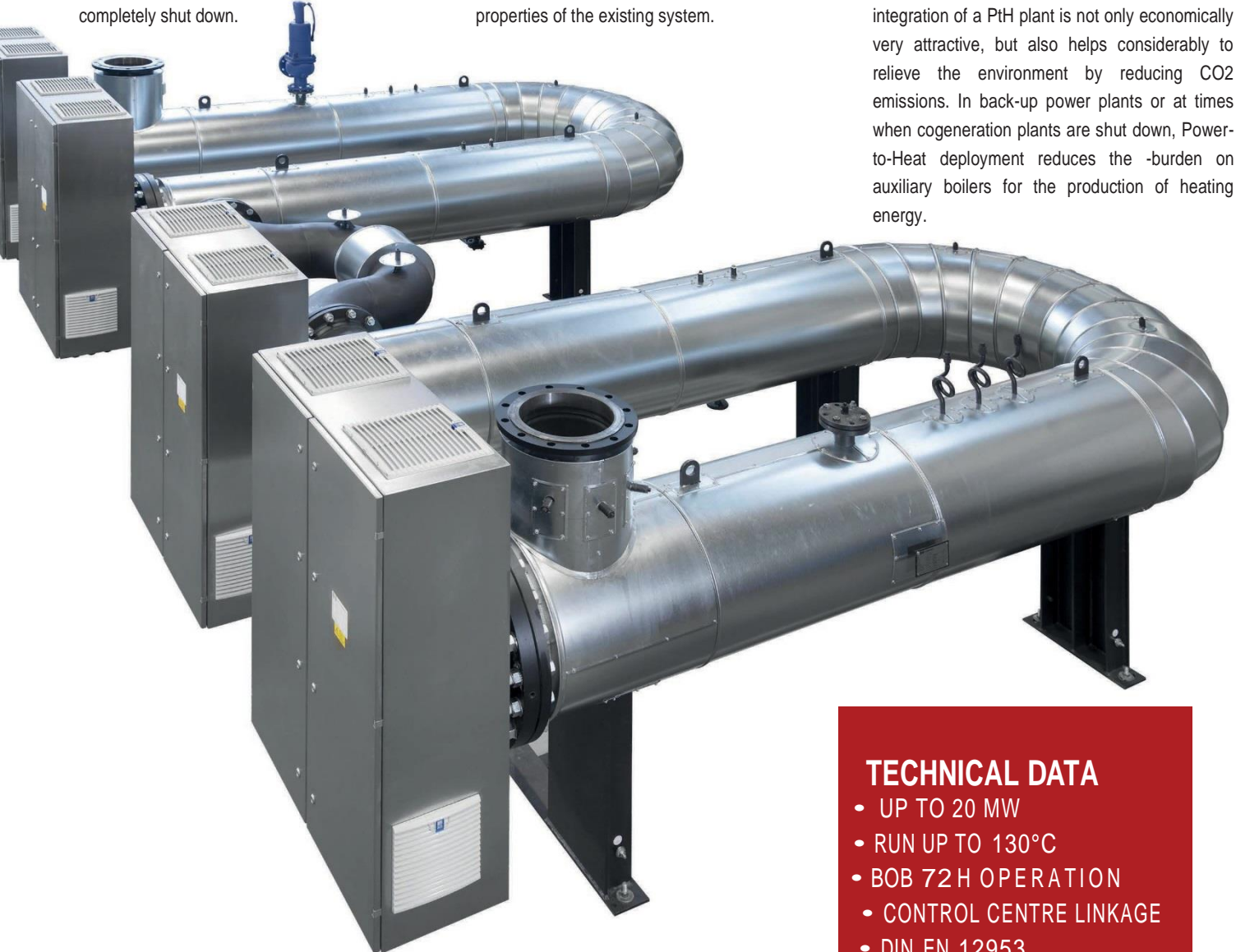
Electricity generation always produces heat as well. This is frequently used to operate district or long-range heating networks. At times when the electricity market is oversupplied, power and cogeneration plants must maintain their supplies to the district heating nets and cannot be completely shut down.

PROJECT-ORIENTED SOLUTIONS

We project and supply electrical CSN® high-performance continuous-flow heaters and complete systems in the required performance sizes. They are naturally integrated into the existing control system. PtH plants from Schniewindt are fitted exactly to the given properties of the existing system.

YOUR BENEFIT

As the operator of a PtH plant, you can participate in the negative electricity balancing market. You are paid even for your readiness to supply this service, and you can go on to produce heat for your district heating network at a very favourable price when the PtH plant is running. The integration of a PtH plant is not only economically very attractive, but also helps considerably to relieve the environment by reducing CO₂ emissions. In back-up power plants or at times when cogeneration plants are shut down, Power-to-Heat deployment reduces the burden on auxiliary boilers for the production of heating energy.



TECHNICAL DATA

- UP TO 20 MW
- RUN UP TO 130°C
- BOB 72 H OPERATION
- CONTROL CENTRE LINKAGE
- DIN EN 12953

POWER TO HEAT CITY UTILITIES



THE SITUATION

Municipal utilities often operate their own power stations and the linked district heating networks. When renewable energies cause the power grid to be over-supplied, the overall performance of the urban utility must be reduced. This results in a shortage of heating energy for the linked district heating network.

PROJECT-ORIENTED SOLUTIONS

To maintain the required heating performance when the power output is reduced, the percentage grid surplus in the Power-to-Heat plant is converted to heat. The use of auxiliary boilers fired by fossil fuels can be significantly reduced. Schniewindt projects and delivers electric continuous-flow heaters in sizes from only a few KW to 20 MW. This wide range enables us to supply an optimally sized plant for nearly every application. Our service range also includes attuned switchgear with controls and the installation and commissioning of the PtH plant.

YOUR BENEFIT

The flexible operation of the power plant enables you to participate in both the positive and negative energy balancing markets. An additional back-up heating capacity can also be provided if requirements increase. Considerable potential savings in CO₂ emissions and gas exist in this field too.

TECHNICAL DATA

- UP TO 20 MW
- RUN-UP TO 130°C
- BOB 72 H OPERATION
- CONTROL CENTRE LINKAGE
- DIN EN 12953

POWER TO HEAT **BIOGAS**

THE SITUATION

During electricity surplus periods, the power produced in cogeneration plants cannot be cost-effectively fed into the public grid. However, since heat production must be continued, either to provide process heat or feed a local heating network, the cogeneration plant cannot be shut down completely. Even a partial shutdown would not be economic.

PROJECT-ORIENTED SOLUTIONS

The use of our CSN® Power-to-Heat unit removes the need to throttle down the cogeneration plant. Its power output can be rationally used in the existing heating system once it is converted to heat energy. The power produced by the cogeneration plant serves as a buffer for periods when balancing electricity is demanded. The cogeneration plant can be run continuously without restrictions at its optimal operating point.



YOUR BENEFIT

Besides participating in the negative energy balancing market (which is subsidized), you gain additional profits by saving on gas for heat generation. Here too, you as an operator contribute to the reduction of CO₂ emissions.

TECHNICAL DATA

- 300/500 KW
- RUN-UP MAX. 100°C
- ALSO SUITABLE FOR OPEN-AIR INSTALLATION

POWER TO HEAT **MAJOR INDUSTRY** & **SWIMMING CENTRES**



THE SITUATION

Unlike city utilities, swimming centres typically are major heating consumers because they must keep the water temperature in the pools at a desired level. The high-performance plants of major industrial users frequently require steam, superheated steam or thermal oils as heating media for various production processes. Oil or gas heaters are usually installed to heat these media to the desired level.

PROJECT-ORIENTED SOLUTIONS

The electric continuous-flow heaters we offer heat the above-mentioned media extremely effectively in parallel operation. The CSN® controls ensure outstandingly reliable regulation.

YOUR BENEFIT

The use of electric continuous-flow heaters to heat thermal media (steam, water or heat-transporting oils) enables the user to participate in the negative energy balancing market under certain conditions. The grid operator pays the user for maintaining and operating such systems. You save fuels and reduce CO₂ emissions here too. The efficiency of our CSN® electrical continuous-flow heaters is greater than 98 % and therefore highly resource-saving.



TECHNICAL DATA

- UP TO 5 MW
- RUN-UP TO 130°C
- INTEGRATION INTO THE HEATING CENTRE
- DIN EN 12953



Kunden Audits:

Customer audits:

- Q1 Deutsche Bahn AG
- ABB Power Systems
- Liebherr-Aerospace
- Siemens
- Bosch Rexroth
- Voith

Produkt Zulassungen:

Certifications/approvals:

- RW TÜV
- CSA & ANSI & UL
- PTB, Physikalisch
- Technische Bundesanstalt
- Lloyd's Register of shipping
- GOST
- RTN/KTN
- DIN 2303GSI SLV
- DIN EN 15085-2GSI SLV
- 97/23/EG Modul H
- DGRL HP0



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