



... **technology**  
in harmony  
with **nature**

cogeneration





# cogeneration

The CHP unit manufacturing group is one of Tedom's key business divisions. Tedom's CHP products are recognized worldwide for their very high technical standards, reliability, unmatched performance, as well as our professional after-sale maintenance.

TEDOM's extensive experience gained in the development of cogeneration technologies, our highly trained and qualified staff and our operating experience of our own CHP units has created value-added products that create significant benefits for our global customers. TEDOM is one of Europe's premier CHP manufacturers in the field of small-scale cogeneration.



Production plant in Hořovice



Production plant in Výčapy

*Photo above: Production plant in Třebíč*

# Tradition



## CHP Unit Manufacturing History

The first TEDOM CHP unit was manufactured in 1991 with an output of 22 kW powered by a Škoda Favorit combustion engine. Two years later TEDOM began manufacturing CHP units equipped with LIAZ engines. In 1995 the number of manufactured CHP units reached 100. The following year the first CHP unit with a Caterpillar engine was introduced. 2003 served as a milestone for TEDOM with the production of the 1000th unit and the purchase of the LIAZ engine manufacturing production facility in Jablonec nad Nisou. These engines are now offered under the TEDOM trademark. In 2005 the Quanto range was introduced extending TEDOM CHP power using MWM engines. By the end of 2008 the number of manufactured and sold TEDOM CHP units reached 2000.

In 2010 the total electrical power of all the installed CHP units exceeded 600 MW. Since 2012 CHP units have been assembled in Třebíč resulting in a significant increase of production capacity for the company.

# know how

## Development, Manufacture, Sales



**The development of TEDOM CHP unit** production is centered at the production plant located in Hořovice. Our skilled team of research and development engineers continuously works to introduce new models that respond to marketplace demands and customer needs. Concurrently, they are also focusing on ever-increasing CHP unit life, reliability and system capabilities by integrating knowledge and experience developed through TEDOM's CHP operating experience. Our specialists not only monitor the latest trends in the cogeneration industry, but also gather data and experience from CHP unit operators, service and maintenance staff. This "real world" TEDOM advantage provides important input to our design team enabling them to implement market driven flexible responses to our CHP construction and design process. All these combined activities facilitate the creation of a "Total TEDOM Customer Satisfaction Ownership Experience" and provide for long and exceptionally reliable CHP operation.



**The manufacture of TEDOM CHP units** is located in Hořovice and in Třebíč. With our extensive CHP manufacturing and installation experience, we are to modify requirements to meet clients' specific needs. Our competitive advantage is our history of listening to, and responding to our customers' needs. The entire manufacturing process is ISO 9001 certified.



**The efficient sale of TEDOM CHP units** is ensured via our skilled business managers who are highly experienced in the technical and economic aspects of TEDOM installations. This expertise allows TEDOM to offer its global clients the best CHP recommendation for a variety of applications. Our team closely cooperates with a wide range of business partners around the world to provide sales, service and maintenance support to our customers. In addition to our business partners, there are TEDOM subsidiary in Russia, China, Germany, Poland and Slovakia.



## Combined Production of Heat and Power

Cogeneration is a highly efficient and ecologically beneficial methods of power generation consisting of the effective utilization of waste heat while producing power. During this heat and power generation process, fuel energy utilization is up to 90% with minimal losses.

# in the World

## TEDOM in the World

Currently we export our products to more than 40 countries in the world – including Australia, China, Russia, Europe and the Americas.



TEDOM is one of the leading cogeneration technology suppliers in the world. Because of TEDOM's long-term experience with CHP installations around the world, we are very flexible in meeting our clients' different requirements. Also, in co-operation with our representatives, we work to develop solutions that respond to specific local conditions.



## Reduction of CO<sub>2</sub> Emission Level

**Reduction of CO<sub>2</sub> emissions** is also an important aspect of a high efficiency of fuel utilization. Tedom CHP systems significantly reduce CO<sub>2</sub> emissions over separate source production of heat and power.



# options

## Configuration Options

### **TEDOM CHP units are delivered as standard with:**

- compact block version with sound enclosure
- version without sound enclosure
- placed in a container
- custom designed individual requirements

### With Sound Enclosure

- The sound attenuated version is designed for inside installation. The key advantages of this configuration are speed and ease of installation along with low noise level. This is the most popular version of TEDOM CHP units.



### Without Sound Enclosure

- A simple concept without sound enclosure is designed for installations where an enclosed engine room is available.



## Cogeneration = Power + Heat

Electricity generated by a CHP unit can be used for consumption by the building in which the machine is situated, or it can be supplied to the grid. The heat from CHP unit is used to heat the building, to prepare hot water or for process heating. CHP units are also used as emergency sources of electricity in places where an uninterrupted supply is necessary.

# enclosure



Trigeneration = Power + Heat + Cooling

Utilizing absorption chillers, it is possible to use heat produced by cogeneration for process cooling or air conditioning. The combined generation of power, heat and cooling is trigeneration.



# options

## Configuration Options



### Containerized

- The container version is designed for external installations outside the residential or industrial buildings. This provides easy installation and resistance to weather elements.



### Fuels Used

The major fuel for running CHP units is natural gas, however, a number of units have been configured to use biogas, landfill gas, gas from water treatment plants or other alternative fuels like mine gas for their operation.



# Controlling and Monitoring

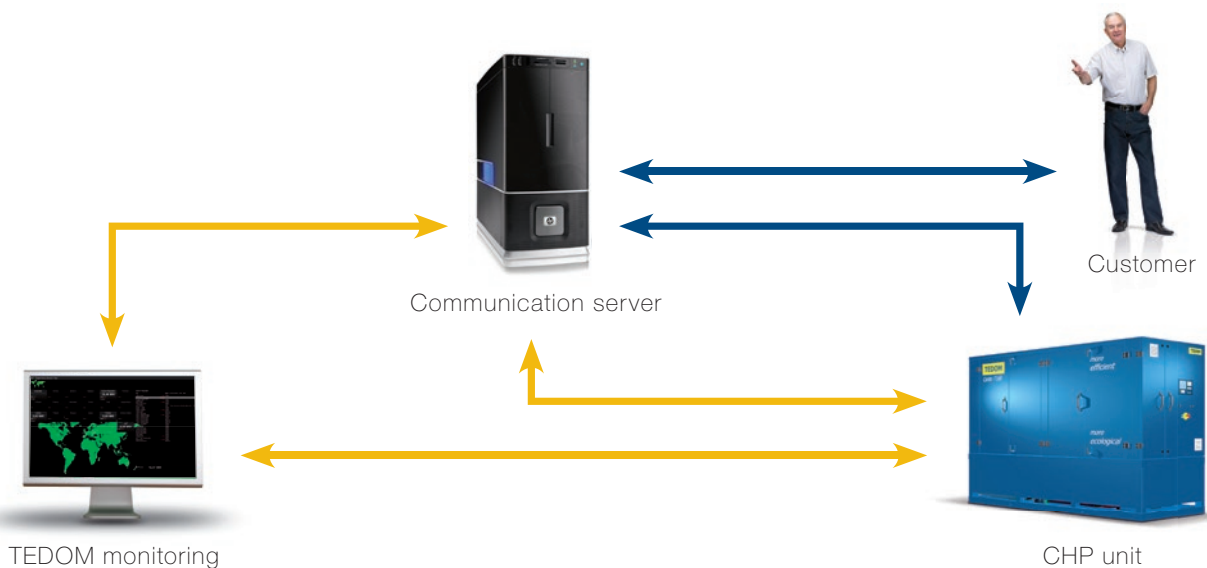
TEDOM CHP units utilize several types of controllers depending on CHP unit output and customer requirements. All controllers fully support the automatic operation of the total system.

Specialized control systems, called concentrators, allow division of power among individual machine sets or are used to control multiple CHP units.



CHP units can be controlled locally or remotely. Keys and control system displays are used for local monitoring and remote control. This can be carried out directly from a connected PC or via Internet or from a mobile phone.

An internet connection can monitor the CHP unit installed at customer site remotely to maintain maximum efficiency and reliability.



## Typical Applications for Cogeneration Technology

Cogeneration units can be used in all buildings with year-round demand for the consumption of heat, power or cooling. Examples of such uses include hospitals, nursing homes, swimming pools and spas, ice rinks and stadiums, district heating plants, hotels, department stores or industrial plants. When biogas is used, they are also suitable for water treatment plants, agricultural –related sites, and some communal landfill sites.

# service

## After-Sales Services

Service support is an integral part of the business partnership between TEDOM and its customers. Our service personal are able to provide superior customer support that do to their training and extensive experience supporting hundreds of CHP units operated by our customers.

After-sales services for particular markets can include:

- CHP unit commissioning
- ongoing maintenance
- remote monitoring of CHP units
- service during and after the warranty period of all CHP unit parts
- major repairs and overhaul service of the CHP unit
- training of service staff of TEDOM representatives abroad
- training of operator staff in the field of CHP unit servicing and maintenance



## Central Warehouse of Spare Parts

To facilitate timely repairs, TEDOM maintains an extensive inventory of spare parts in our centralized warehouse.

# Examples of TEDOM Installations



*Hotel Split, Kadaň, CZ, Micro T30, 2011*



*Sandcastle Waterpark, Blackpool, Great Britain, Cento T200, 2012*



*Mines, Vrbice, CZ, Quanto D580, 2005*



*Town Hall, Oberndorf, Germany, Micro T30, 2011*



*Airport, Sydney, Australia, 2 x Quanto D4000, 2012*



*Industrial Plant, Svit, Slovakia, 6 x Quanto D2000, 2012*

TEDOM **cogeneration** [www.tedom.com](http://www.tedom.com)

For more information please check our website or contact our partner in your country.  
The list of TEDOM Partners is available at [www.tedom.com](http://www.tedom.com)

