

URBAN EP PROGRAM ENERGIEEFFIZIENZ

Energy-efficient use of compressed air

EXCERPT

City+Vienna

Vienna is different.

Municipal Department 27
EU strategy and
Economic development

7.2 Wopfinger Baustoffindustrie GmbH

7.2.1 The operation

Wopfinger Baustoffindustrie GmbH (WBI) is a family group in the third
th generation and is based in Wopfing, Lower Austria. Here in
400 employees produce cement, lime, dry plasters, screeds and more
Facade plasters. WBI is one of the most important employers in the re-
gion and is at the same time one of the largest clients for numerous regional
Companies (e.g. freight companies, commercial businesses, restaurants, etc.).

The two managing directors of WBI are DI Manfred Tisch and Mag. Georg
Bursik.

WBI is a subsidiary of Schmid Industrie Holding. The Schmid
Industrieholding also has its headquarters in Wopfing. She's busy
has over 4,000 employees worldwide and is currently involved in building materials production in 19 countries.
production area.



Fig. 35:
Wopfinger
Building Materials Industry Gmbi

7.2.2 Initial situation

The existing compressed air system at the Wopfing location was developed by the producer
from the end to the end consumer, the following were examined
Weak points identified:

Due to the constant growth of the location in Wopfing over the years, there are four
decentralized - but as central for the production location itself
Significant - compressed air stations were created.

These four compressed air stations contain compressors, refrigeration and ad-
sorption dryers, filters and air receivers from different manufacturers, types,
Sizes and years of manufacture.

The pressure level is higher than required in production.
The narrow pressure band combined with the base load alternation circuit leads to
excessive load/idle cycling and frequent motor switching.

The individual stations are partly connected with pipelines in order to...
If one or more compressors fail, adequate reserve compressed air is available
available at another station.

The refrigeration and adsorption dryers installed behind the compressors work
work by increasing the amount of compressed air from the throughput
sometimes in their technical limits, or are too high
Outside temperatures literally “run over”.

When expanding the compressor stations, retrofitting was carried out
Additional air receivers were omitted for cost reasons.

7.2.3 Measure(s)

By installing an intelligent and higher-level Airleader control
The compressor interaction with the existing ones was optimized
resources achieved. The energy costs are reduced by reducing the system pressure
(-5%), avoidance of idle hours (-99%) and reduction of motor switching
play of the compressors is reduced. Missing compressed air tanks were replaced
prepares. Two technically outdated compressors were disposed of and replaced by two
efficient speed-controlled compressors with included refrigeration dryers replaced.
Refrigeration and adsorption dryers were replaced internally or new ones with the technical
nically correct design.

7.2.4 Result

By lowering pressure and reducing idle speed in the individual areas
a higher-level control system, which is independent of the manufacturer used
and the compressor performance, as well as a reduction in leakage, results
a total annual energy saving of approx. 900,000 kWh (or
around 20%), or a monetary saving of over
70,000 EUR annually. Amortize the measures
in about 3 years.



Fig. 36:
Compressed air systems
Wopfinger
Building materials industry
GmbH

Additional benefits from the measures

- improved security of supply
- Due to the lower wear of the
  Compressors will have service intervals
  extended and maintenance costs minimized.
- CO savings: 282 t p. a.

7.2.5 The verdict of the satisfied energy manager

The WBI has set itself the goal of making its plant the most modern building materials plant
Europe and thus secure the location in Wopfing in the long term
to maintain jobs. That's why we've been investing for several years
Millions of dollars in ecological measures for energy optimization, dust and



Fig. 37:
Ing. Christian Steinbrugger, energy manager
the Wopfinger Baustoffindustrie GmbH

CO, reduction. The extensive project to modify our factory wide
We have developed branched compressed air production together with our suppliers
ten and partner companies, as well as our own “know-how” in less than 9 months
to the complete satisfaction of the management.

“Our compressor management system combines different sized components
compressors automatically open according to the current compressed air consumption
the unit ceasing production. With online visualization everyone can
DL station is monitored and errors in the system can be quickly identified. The exit
Evaluation can be done hourly, daily, weekly or monthly. The goal of the
Guaranteed energy savings could be achieved without any problems. Our
Idle share is less than 1%. If there are any problems with compressors or refrigeration
There is sufficient reserve available in the dryers.
The production of compressed air is a very complex topic, which unfortunately happens far too often
is fatally neglected. I can recommend it to anyone responsible for the plant
We recommend taking a very close look at your own system - it has great potential
Potential for savings opportunities. Get feedback from colleagues
Colleagues in the field and pay attention to the energy technology
Advantages of the components and not just the pure purchase price advantage.
Due to the constantly rising electricity costs at the moment, the investment
The investments in the new system will pay for themselves more quickly, as in our first calculation
shown.
The sustainable further development of the plant in Wopfing is very important to us
Concerns, so there are further environmentally relevant projects with a chance of success
logical consequence."

Excerpt from the brochure “Efficient Compressed Air Application” from the Municipal Energy Efficiency Program (SEP) of the City of Vienna.