ENHANCE ECO EFFICIENCY of combustion processes
WE ARE NOT DONE YET

Despite the world’s effort to limit CO₂ emission, consumption of fossil fuels is still growing in the energy market.
Thermal power plants are still the best choice as the backbone of the power supply. That’s why environmental protection should not be about shutting down thermal power plants, but improving them.

The way to make energy generation greener is to increase the eco-efficiency of power plants through science and technology.

Pentol chemicals offer a cost-effective way to solve emission problems at the source, instead of upgrading thermal power plants with expensive cleaning equipment. Power plant operators can significantly improve performance with technological turnkey solutions.

In addition to providing a healthy return on investment, this is a practical contribution to the long-term preservation of our environment.
There is a problem to be solved in the energy industry: Producing green energy that is affordable.

Most people agree that the world needs to reduce the environmental footprint of its energy production, but we have to remember that we also need access to an affordable and continuous supply of electricity.

Unfortunately, it is a fact that not many countries worldwide can afford 100% green energy.

Pentol has a solution: Reduce the environmental footprint of existing power plants by optimizing their efficiency. We offer a detailed on site evaluation of each power plant, assessing the rentability of available technologies and the implementation of the most promising ones.
Increasing the efficiency of power plants is a thrilling challenge.

Pentol’s combustion engineers regularly visit every treated plant to verify the results. Hand in hand with the client, we analyze the situation and take measures to bring the plant up to the most efficient operation.

A perfectly tuned boiler, diesel engine, or gas turbine is not only more efficient and cheaper to operate; it is also more reliable and produces fewer outages. This gives our clients flexibility in their operations – and the budget savings to invest in renewable technology.

MEGA WHAT?

Imagine 450 large wind generators running 24/7.

450 large wind generators running 24/7 would produce the energy equivalent of the fuel saved by Pentol technology every year.
We have specialized at increasing combustion efficiency since 1969.

For 50 years, Pentol has produced chemicals and process equipment at its plant in Grenzach-Wyhlen, the southernmost city in Germany.

Since the beginning, our visionary founder and owner has stressed one key value: WE WANT TO CHANGE THE WORLD.

The quality and reliability of our products is the foundation of our success. We continuously work on our processes and products to improve their quality and efficiency.
In addition to the 30 employees working in our headquarters, we maintain a network of branches and service companies around the globe.

We have a worldwide network of international specialists developing customized solutions for every market, working side by side with our customers.

We are proud of the great number of extraordinary projects we have completed, like the development of emission measuring instruments in Poland, the optimization of diesel engines in Cuba, and the reduction of dust emissions in Europe, to name just a few.

We bring our experts together regularly to exchange ideas and take advantage of synergies at the global level.
WHAT WE OFFER

The following pages give an overview of the technologies and products currently produced by Pentol.

Fuel Oil Fired Boilers

PentoMag for HFO
prevents corrosion and deposits in the boiler and increases heat transfer efficiency.

Coal Fired Boilers

PentoMag for Coal
prevents slagging and sintering of ash and increases boiler efficiency.

Diesel Engines & Gas Turbines

PentoMag for Diesel
increases diesel engine efficiency and reduces maintenance cost.

Waste & Biomass Incinerators

PentoMag for Waste
inhibits deposits in waste incinerators.
We continuously adapt them for different markets and opportunities, so make sure to contact your representative to find out how we can partner with you to serve your particular needs.

**PentoMuls**

is a water-in-oil emulsification technology for complete carbon burnout and fly ash reduction.

**Fuel Oil Treatment**

The synergy from the combined use of PentoMuls and PentoMag is a multiple efficiency.

**Flue Gas Conditioning**

increases electrofilter efficiency and the quality of gypsum.

**SO₃ Generator**

Is based on the same principle used in flue gas conditioning but in micro doses for laboratory use and factory

**PentoMag for Turbine**

inhibits corrosion and increases efficiency of gas turbines.

**PentoSolv3**

is our powerful industrial detergent for encrusted deposits.

**Sulfur chlorine balance**

creates a sulfur/chlorine equilibrium and breaks the circle of chlorine based corrosion.

**SO₃ Monitor**

for online emission measurement.
WHAT DOES COOPERATION WITH PENTOL LOOK LIKE?

We examine the whole process to identify parts or equipment where we see optimization potential, and where we can contribute to better fuel combustion.

Typically, our products and technologies consist of three parts. First is the protection of your boiler or gas turbine (or diesel engine). Next is environmental protection. Finally, we seek an efficiency increase that will reduce emissions and easily pay for the treatment through cost savings.

Dosing of additives for combustion optimization

Increase efficiency
Preserve materials

Measuring emission

We always see the big picture

www.pentol.net/power-plant-optimization
Case study

Will it work for you? Ask us for a success plan custom designed for you. Here is an example from a heavy fuel oil fired power plant.

1. Discuss fuel characteristics, define additive
2. Identify dosing point
3. Clean boiler
4. Start treatment
5. Measure results
6. Supervise treatment and adjust combustion

Reduced fly ash after a complete carbon burnout is just one example of a positive effect (in addition to fuel savings and reduced emissions, deposits, corrosion, and maintenance).

Pentol finds solutions for a large number of well-known companies worldwide.

Questions regarding function, support, and sales will be answered promptly via our online chat support or by sending e-mail to sales@pentol.net.

Every power plant is unique. We have learned that no two boilers are alike, and every client has to be treated on an individual basis.

We are thrilled to help you find solutions to your individual challenges, and we look forward to meeting YOU!
Power plant optimisation made in Germany