

The logo for ÖkoFEN, featuring the brand name in white, bold, sans-serif capital letters on a green rectangular background.

ÖkoFEN

The logo for ZeroFlame TECHNOLOGY, with 'ZeroFlame' in a stylized white font and 'TECHNOLOGY' in a smaller, all-caps font below it.

ZeroFlame<sup>®</sup>  
TECHNOLOGY

A stylized graphic of a fire flame in the center, with a bright white and yellow core transitioning into orange, red, and blue colors, set against a dark blue background with light streaks.

# Feuer

neu erfunden

The cleanest ÖkoFEN pellet heating system ever

# Our claim: Better and better

The world's first type-tested pellet heating system, pellet condensing technology, the fabric tank with flexible sloping floor and electricity-generating pellet heating systems - since 1997, our claim has been to be the innovation leader in pellet heating technology.

Our motto is not to bring the first available ideas to the market, but always the best. We always think ahead and put our own developments to the test again and again.

# The logical way: Always cleaner



The purity of the air has always been a major concern for us. With the clean ZeroFlame® technology, ÖkoFEN has succeeded in reducing dust emissions to an absolute minimum.

Thus, we have once again achieved a decisive milestone and continue to follow our path:

**Always better, always cleaner in pellet heating technology.**



**Making the invisible visible:**

The exhaust air is so clean that nothing can be seen. Only with the help of a cold object the water vapor can be made visible.

# The result: The cleanest ÖkoFEN pellet heating system ever



The amount of dust that leaves the highly efficient pellet heating system is hardly measurable. With our latest development, we make a significant contribution to the purity of the air.

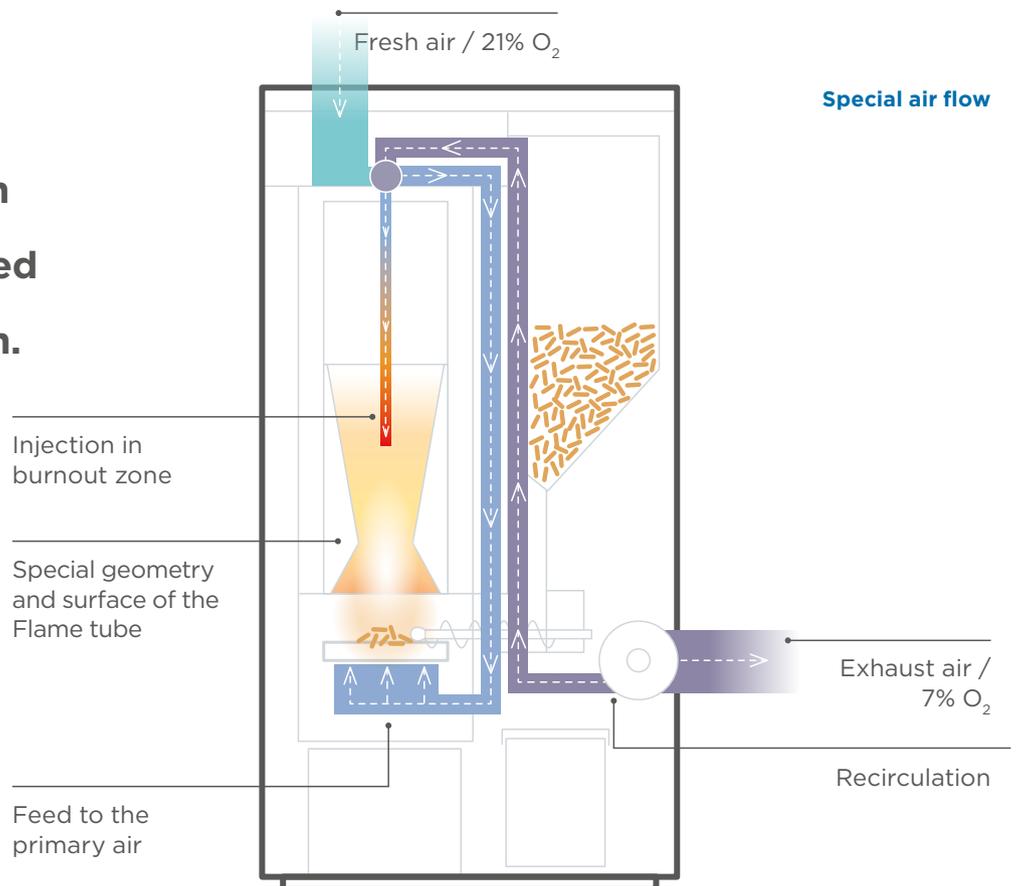


**Best values under practice conditions**  
TÜV Austria tested this cleanest ÖkoFEN pellet heating system: In a cycle test, which simulates the various operating conditions over the course of an entire year, an average of only 2 mg/m<sup>3</sup> (13% O<sub>2</sub>) of dust emissions was measured.

## How does ZeroFlame<sup>®</sup> work?

The great innovation behind ZeroFlame<sup>®</sup> is on the one hand the special flame tube design and on the other hand the subdivided recirculation of the combustion exhaust air. This exhaust air is fed to the primary air as well as injected into the high-temperature burnout zone.

**Minimum emission values thanks to a specially developed air flow – without any E-filter system.**



# Feuer neu erfunden – Fire reinvented

Due to the specially developed air stream, a fire arised - WITHOUT A FLAME. Thereby the fine dust particle emissions are reduced to a minimum.

**The result: Heat and clean exhaust air**

## WITHOUT ZeroFlame®

Regular low dust firing



## WITH ZeroFlame®

Dust emissions close to zero



The comparison of the two technologies shows that the combustion of pellets is even cleaner thanks to ZeroFlame®.

# Convincing in practice

The 9h load cycle test, which also takes into account start, stop and modulating phases, simulates the heating operation over an entire year. Even with changing - so-called dynamic - power consumption, the average emission value remains well below the permissible measurement uncertainty for practical measurements.

Test reports of comparable boilers achieve equally good values, but often only with static power consumption under best conditions, i.e. at the moment of testing, and not during operation, as shown by the load cycle test.

## The particulate matter

### Static type testing

under best conditions  
according to the usual test report  
(according to EN303-5)

### With dynamic power decrease

in 9-hour load cycle test  
incl. start, stop and modulating phases

Dust emission at nominal load mg/m<sup>3</sup> (13% O<sub>2</sub>)

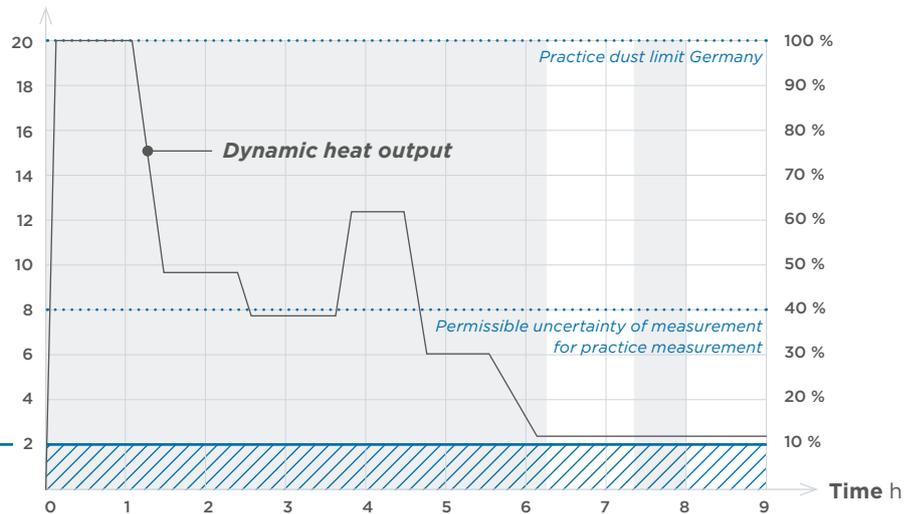
ZeroFlame<sup>®</sup>  
TECHNOLOGY

	Condens	Compact	Smart XS
3 - 10 kW	0,5	0,5	1,3
4 - 12 kW	0,5	0,5	1,5
5 - 14 kW	0,5	0,4	1,7
5 - 16 kW	0,4	0,4	1,8
6 - 18 kW	0,4	0,4	2,0

Ø 2 mg

Total dust in mg/m<sup>3</sup> at 13 % O<sub>2</sub>

Heat output



— Total dust mg/m<sup>3</sup> (13 % O<sub>2</sub>) — Heat output in % — Boiler operating status O/I

# Clean - completely without filters

The ZeroFlame® technology convinces through:



Clean wood combustion  
for best air quality



No high-voltage particulate  
filter necessary



Always in operation, even in start  
and post run phases



No additional maintenance,  
safe to operate



Reliable technology and  
simple construction



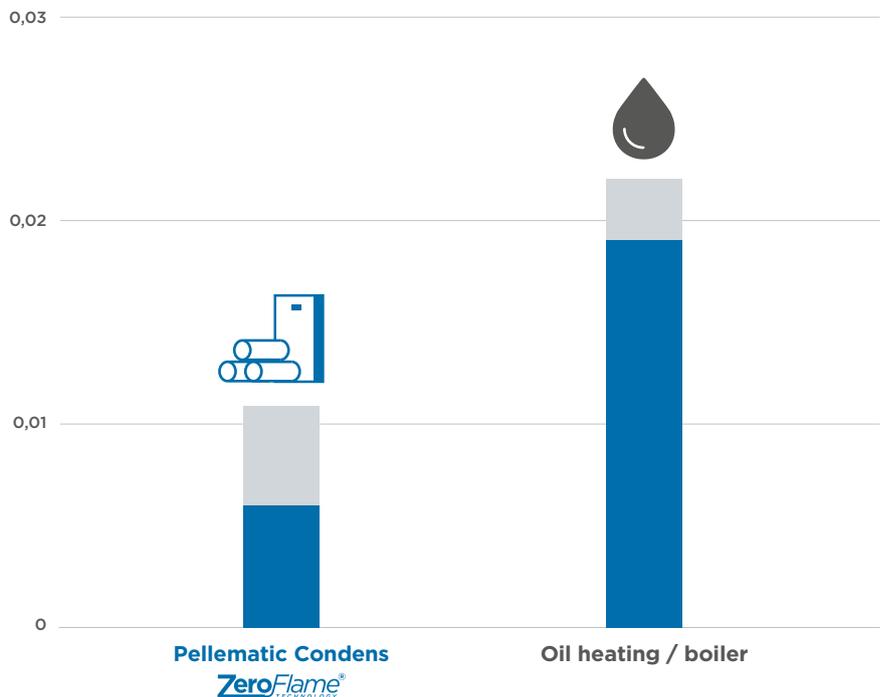
Cost-effective  
in the acquisition

## The benefit – minimal dust emissions

The comparison with other forms of heating clearly shows how minimal the dust emissions of a Pellematic Condens with ZeroFlame® technology are. Not only other wood heating systems, but also practice oil heating systems may have higher dust emissions than the innovative ÖkoFEN technology, when the pre-chain is taken into account.

**If the Pre-chain of energy sources is also taken into account, switching from oil to pellets makes a significant contribution to reducing particulate matter.**

**Dust emissions from heating systems (DE)**  
g/kWh

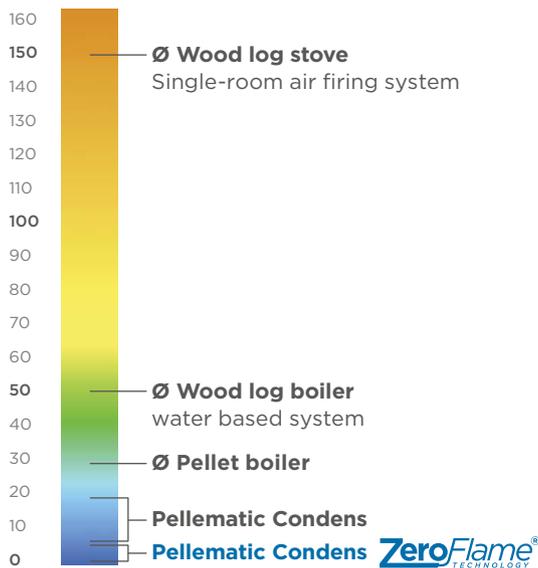


■ Pre-chain  
■ Direct/Fuel

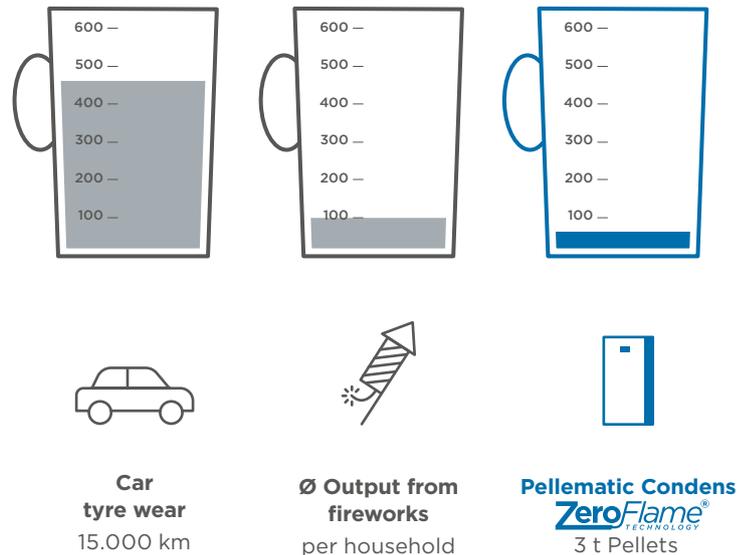
While other filter systems use electrostatic precipitators to reduce dust emissions, pellet combustion can, with very effective and comparatively simple measures avoid fine dust almost completely.

A comparison with other everyday sources of fine dust clearly shows: ZeroFlame® technology is clean even over the course of a year. For example, a pellet boiler with this technology emits only about one tenth of what the tire abrasion of an average passenger car causes.

**Practical dust emissions from wood-fired heating systems**  
in mg/m<sup>3</sup> at 13 % O<sub>2</sub>



**Dust emissions per year (DE)**  
1 cup = 600 g



Source: Emissions balance of renewable energy sources - Determination of the avoided emissions in 2018, German Federal Environment Agency, ÖkoFEN

More information  
about this new and  
innovative technology  
under [oekofen.com](http://oekofen.com)

ÖkoFEN



Explanatory video for the  
ZeroFlame Technology

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