

# Europe's Specialist in Pellet Heating

ÖkoFEN

Thermal Storage Panel, Heating Northeast 2017  
Stefan Ortner, 26.April 2017



# Who we are

**More than 65 000  
boilers in operation**

**The perfect  
pellet heating  
system for  
every house**

**100%**  
Wood  
Pellets



Flexilo Compact-  
Gewebetank



Flexilo-Gewebetank

#### PELLETSHEIZUNGEN



Pellematic



Pellematic Plus



Pellematic Maxi

#### PRAKTISCHE KOMPLETTLÖSUNG



Pellematic Smart

#### SCHICHTSPEICHER



Pellaqua

#### SONNENKOLLEKTOR



Pellesol

#### HEIZSYSTEMREGELUNG



Pelletronic Touch



# Direct Connection vs. Puffer tank

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# Our internal guidelines at ÖkoFEN

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There is no need for a puffer tank unless:

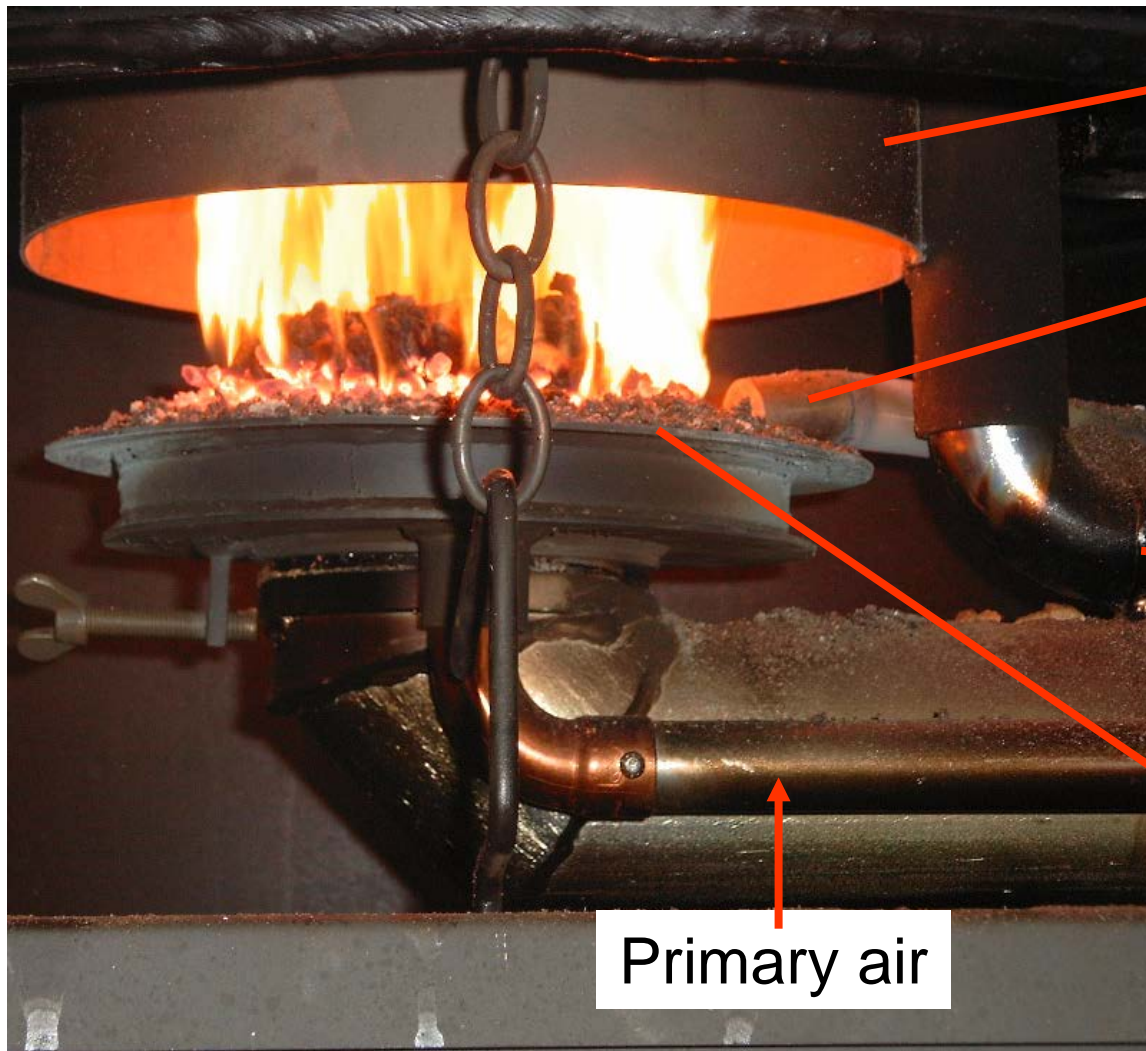
- you want to use solar thermal
- you have a second heat source  
(wood log boiler, ...)
- you want to install a Stirling engine (chp)

Why?

With the right settings our burner can be operated with very little cold starts. Systems with puffer tanks loose 10-20% of the energy through radiation into the basement.

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# Under fed burner



Secondary combustion chamber „flame tube“

Ignition

Secondary air

Burner plate

Primary air

## Advantages:

+ stable operation – pellets are not thrown into the fire from above

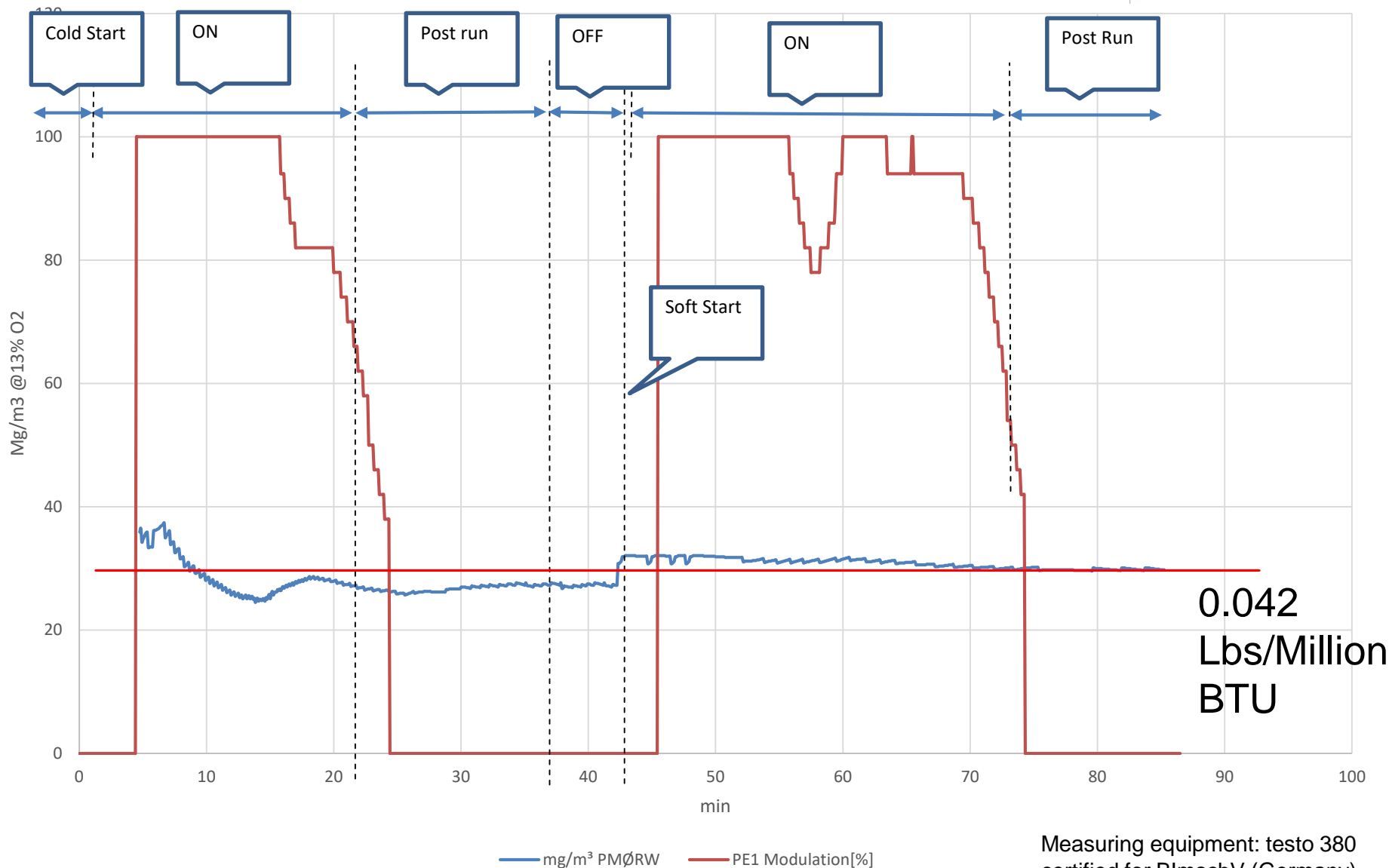
+ soft start and stop

+ very few cold starts (even after hours the glowing stock can be ignited quickly)

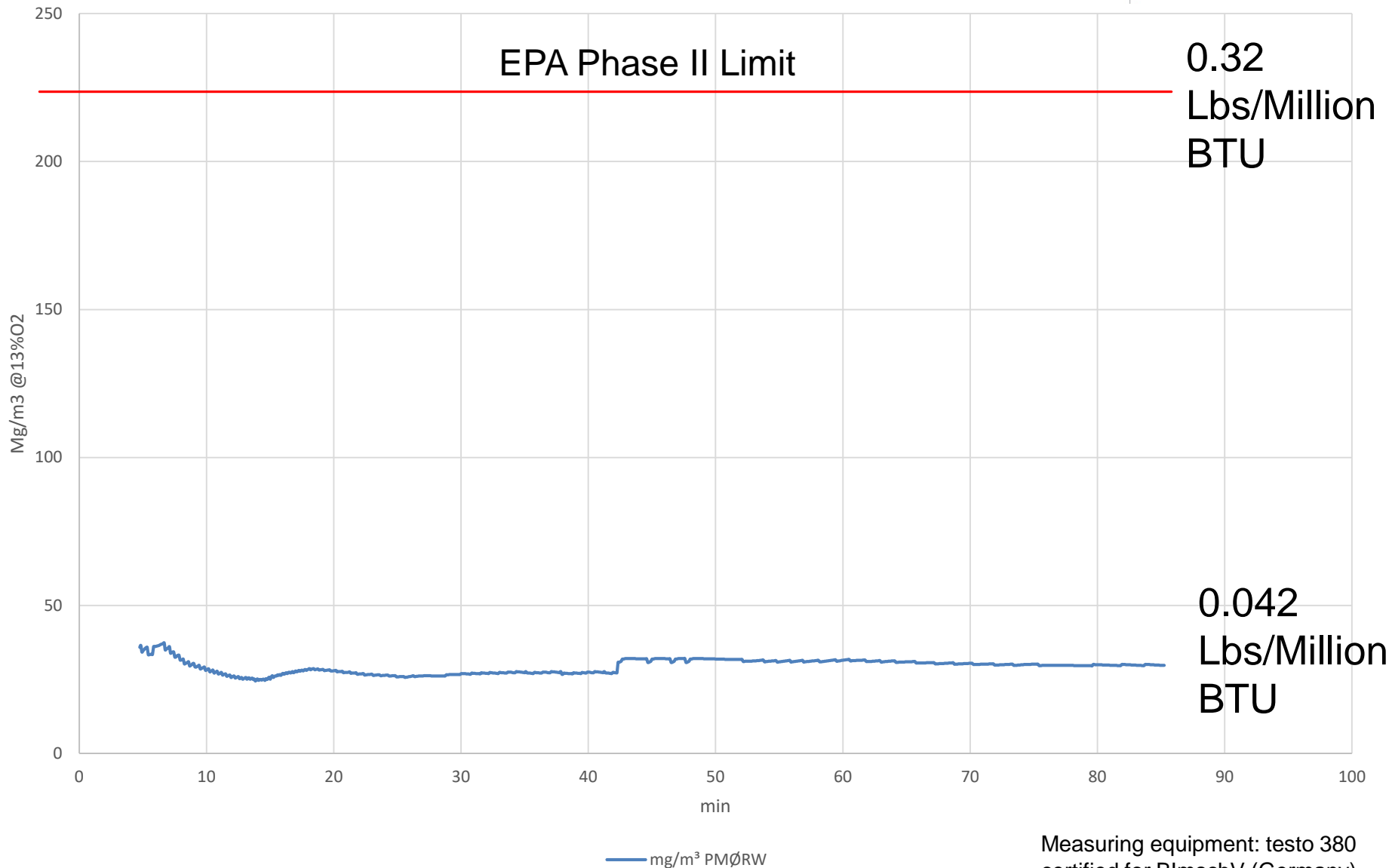
+ quick reacting system due to stainless steel flame tube (no bricks)

+ no periodic emptying of the burner plate for cleaning purposes

# Not every Start is Bad



# Not every Start is Bad





# It can lower Annual Efficiency

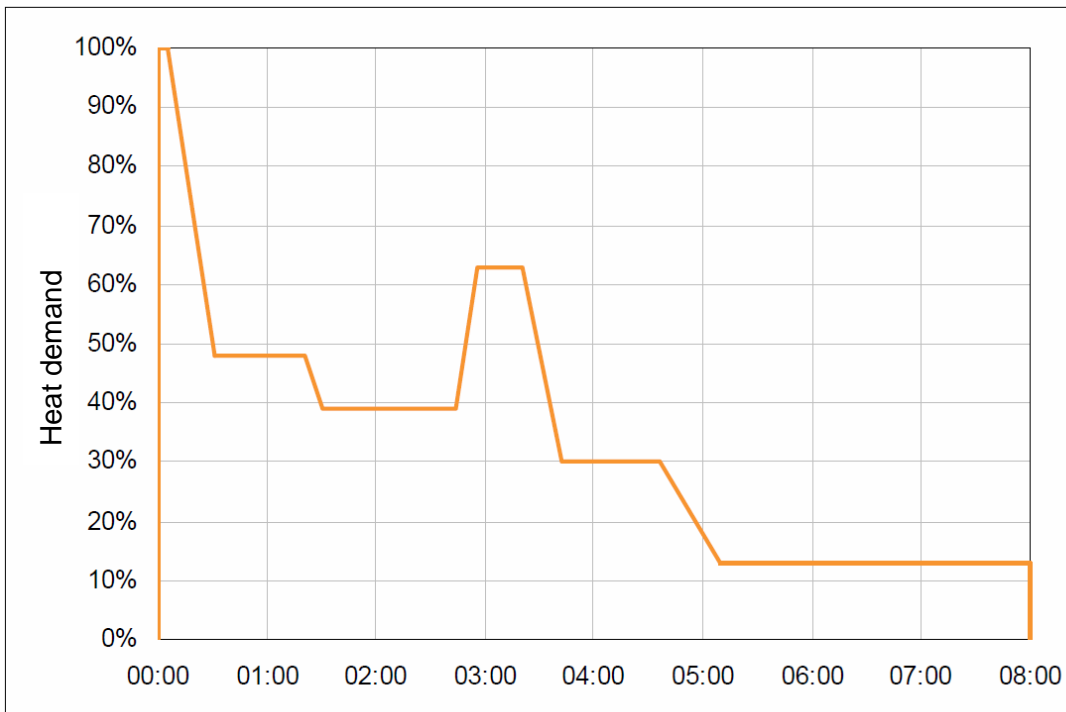
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- Theoretical surface losses: 5%
- Field Experience: 10-20% depending on system design, installation quality and control settings
  - Insulation of the tank and pipework very important
  - Control strategy and settings have huge impact (temp. zones, time settings, ...)

# New cycle test method in Europe

- Cooperation project just started
- Goal: new emission and efficiency testing method based on load cycle
- The load cycle represents annual load requirements within 8 hours of testing



# New cycle test method in Europe

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- This test allows the boiler to react to the need of the building by its own way (thermal mass, controls, ...)
- If emissions and efficiency are good with this test no additional measures should be mandatory
- Most likely the method will be used as a mandatory label at the beginning

- Please cooperate!

<https://www.bioenergy2020.eu/?language=en>

Dr. Christoph Schmidl

[christoph.schmidl@bioenergy2020.eu](mailto:christoph.schmidl@bioenergy2020.eu)

# One way for good results

## Advanced controls ... the future is connected

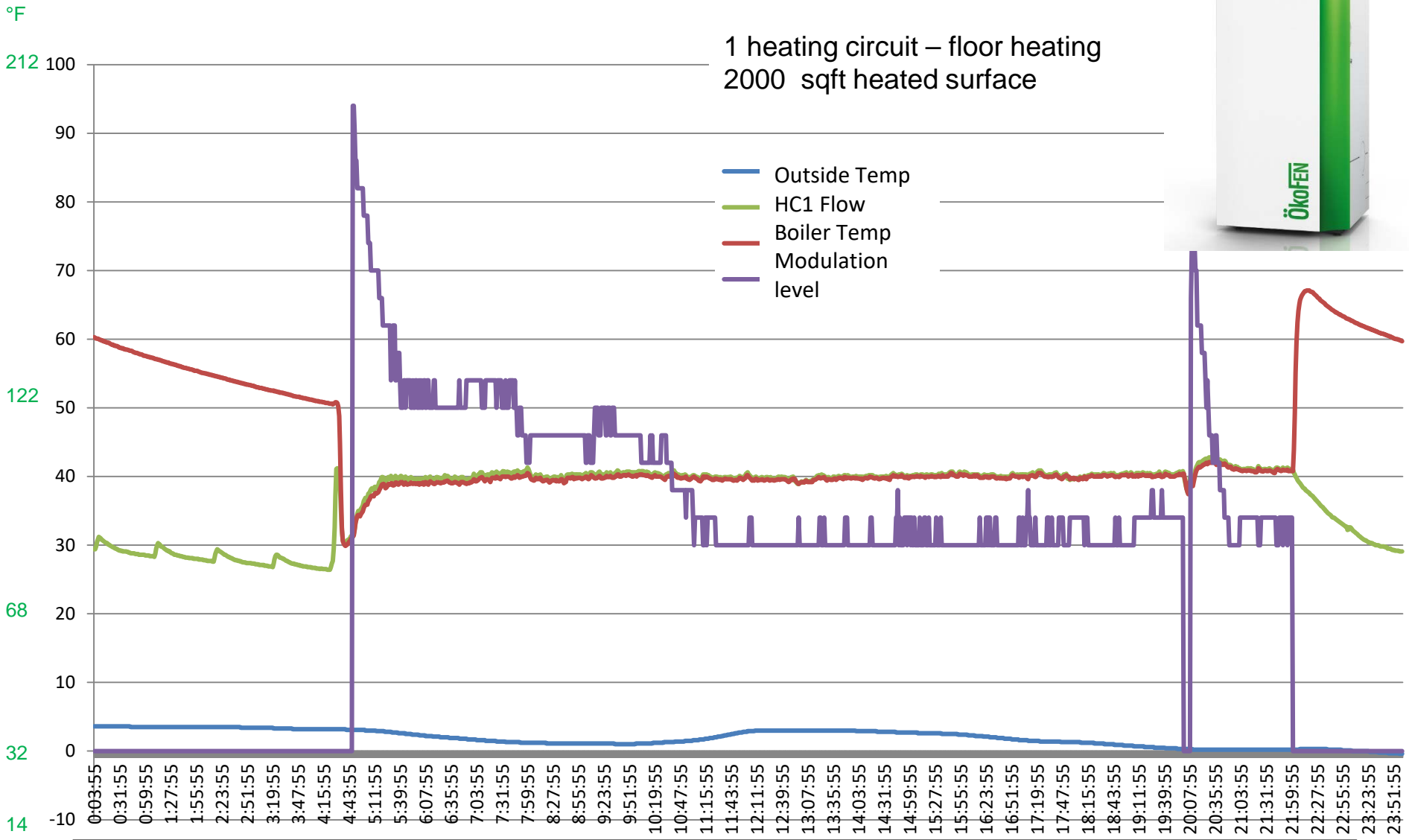


# Low Temp. Control System

## Pellematic Condens 18 KW – during sholder season



1 heating circuit – floor heating  
2000 sqft heated surface



# Conclusion

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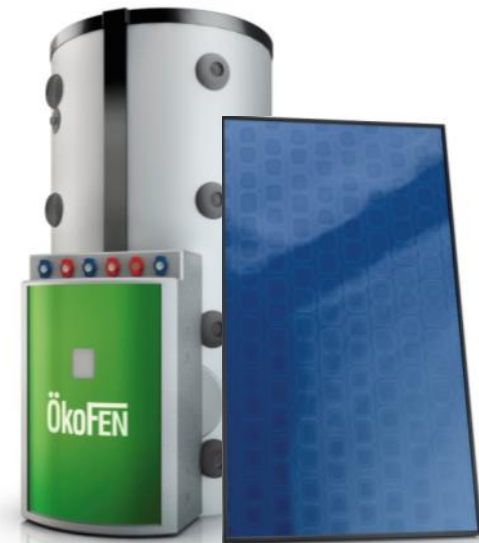
- In order to make wood pellets a “standard” way of heating the installation costs for the installation needs to be lowered
- Puffer tanks can make sense but are not necessary with some combustion and control systems
- If puffer tanks are installed and controlled the wrong way the operation will be worse
- Therefore there is no single subsidy scheme in Europe demanding it. Only about 25% of ÖkoFEN boilers are running with puffer tanks
- We are working on a new European testing method reflecting the real life load cycles of a building. When a boiler performs under this test it will perform in real life as well.



**PELLET HEATING**



**FUEL STORAGE**



**SOLAR PANELS AND  
PUFFER TANKS**

**European Headquarter:**

**ÖkoFEN Forschungs- &  
Entwicklungs Ges.m.b.H**

A-4133 Niederkappel, Gewerbepark 1

Tel.: +43 (0) 7286/ 74 50

Fax.: +43 (0) 7286/ 74 50-10

E-Mail: [oekofen@pelletsheizung.at](mailto:oekofen@pelletsheizung.at)

[www.pelletsheizung.at](http://www.pelletsheizung.at)