



3<sup>RD</sup> INTERNATIONAL CONFERENCE ON  
**SMART ENERGY SYSTEMS AND  
4<sup>TH</sup> GENERATION DISTRICT HEATING**

COPENHAGEN, 12-13 SEPTEMBER 2017



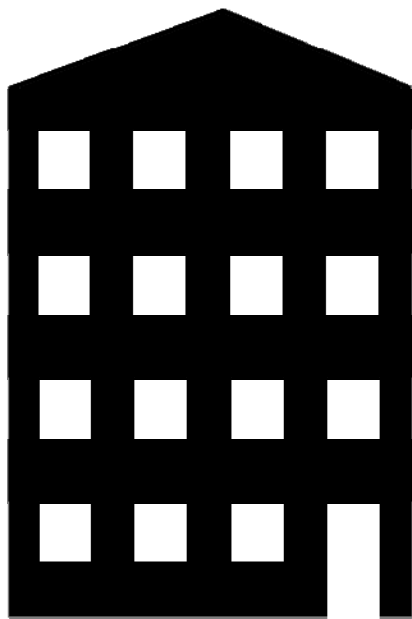
# How to lower the district heating return temperature from historical apartment buildings

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# Introduction



**80 °C  
SUPPLY**

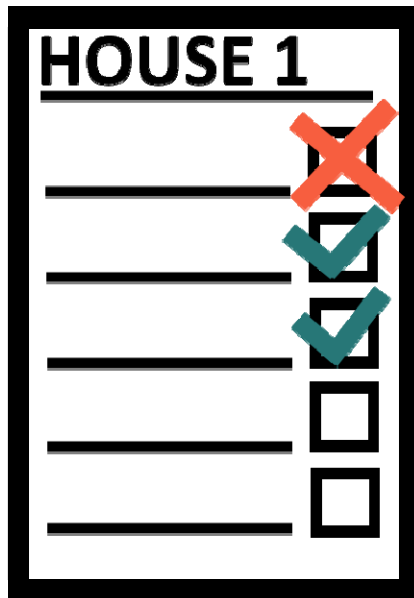


**RETURN  
56 °C**



# Method

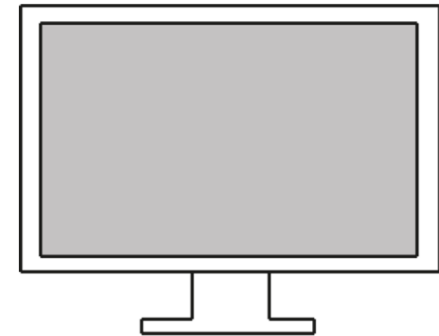
1



2



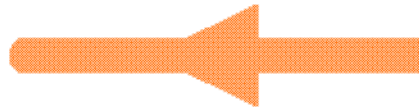
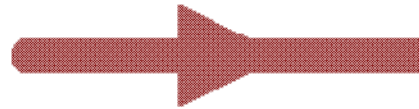
3



# Case



**80 °C**  
**SUPPLY**



**RETURN**  
**56 °C**

**DH cooling**  
**< 29 °C**



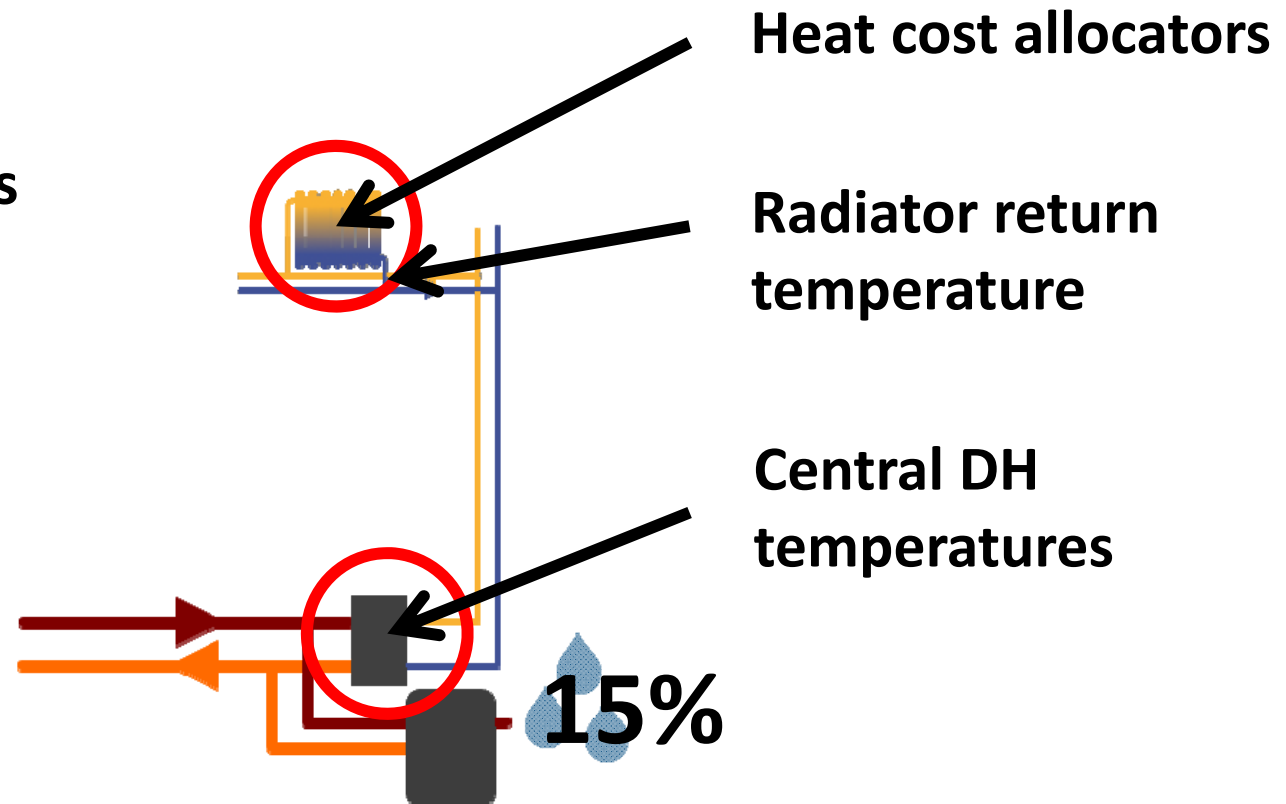
**760 €/year**

# Applied method

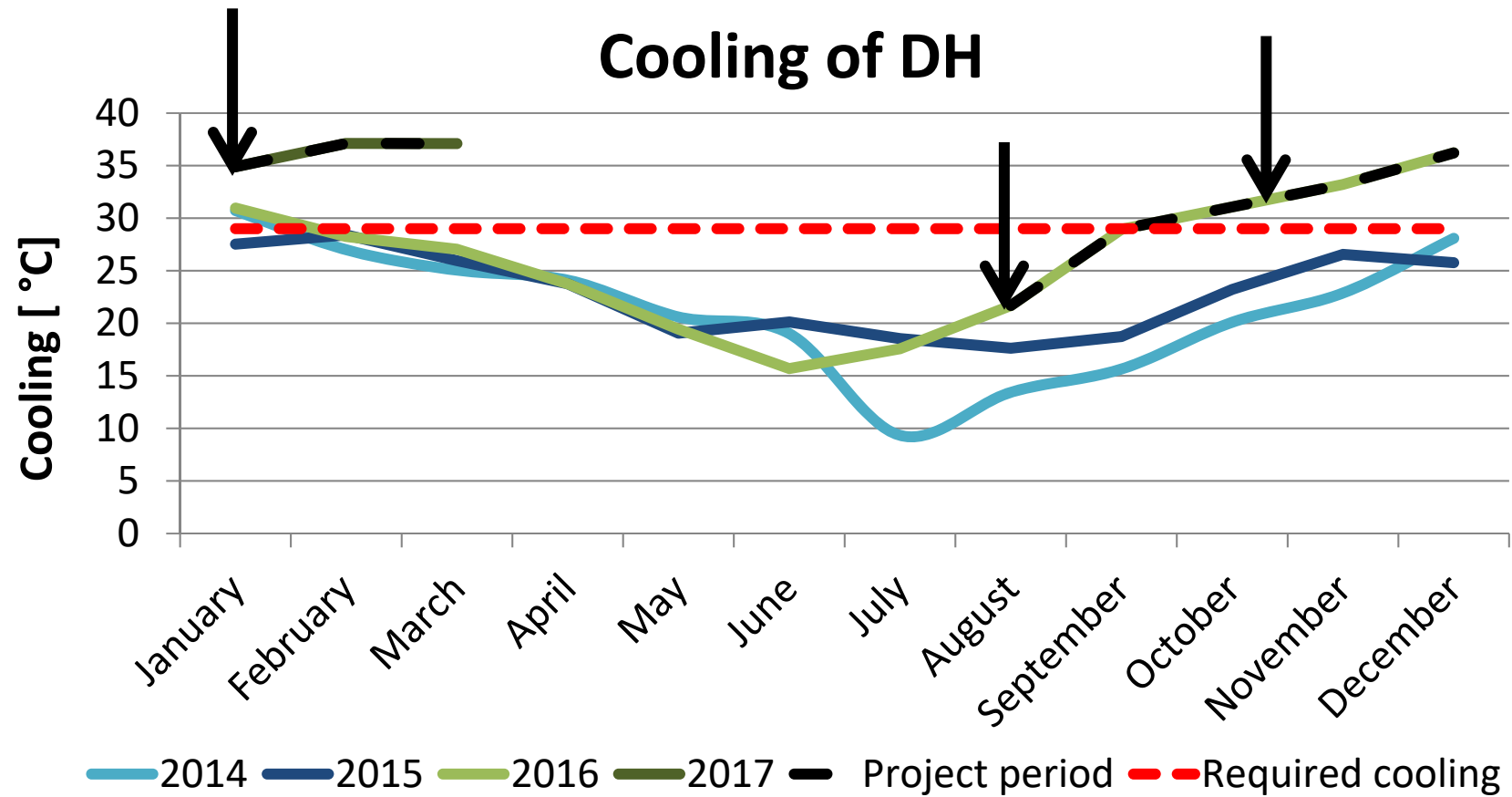
1 Assessment

2 Adjustments

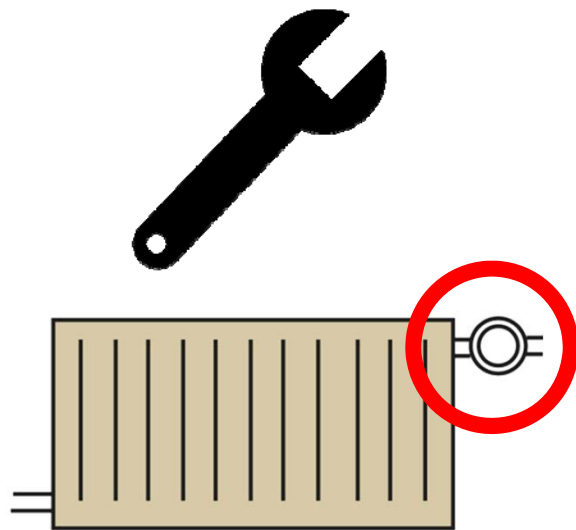
3 Monitoring



# Results



# Discussion



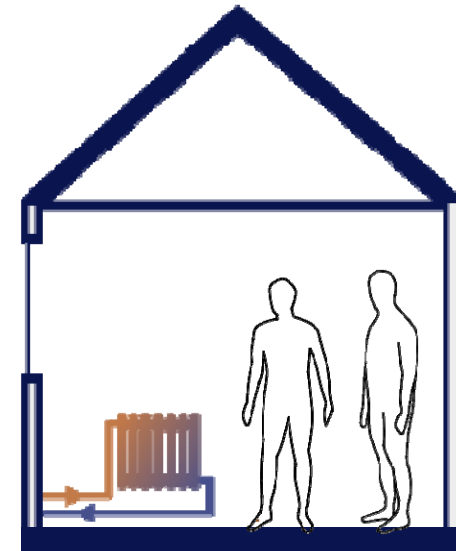
**Effect of  
measures**

**70 °C  
SUPPLY**



**RETURN  
25 °C**

**Low flow vs. weather  
compensation**



**Occupant  
contact**

# Questions?

