

# **ME.SI System for the energy optimization of a boiler**



**How to reduce your energy bill  
(Heating and domestic hot water)**

**MAY 2022**



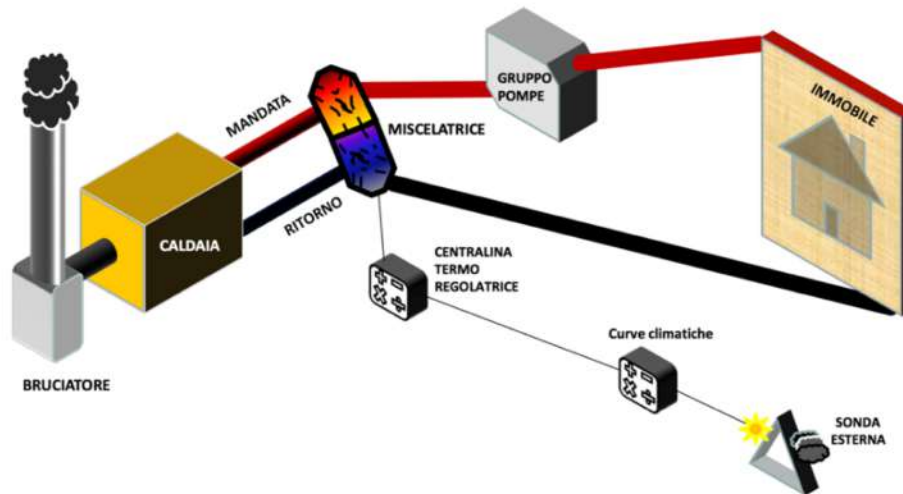
**BY IRIS** A simple and effective solution to install in  
your boiler room

Most European governments are developing plans to deal with rising fuel and energy prices. Current geopolitical uncertainties lead manufacturers to study new solutions in order to minimize their energy bills.

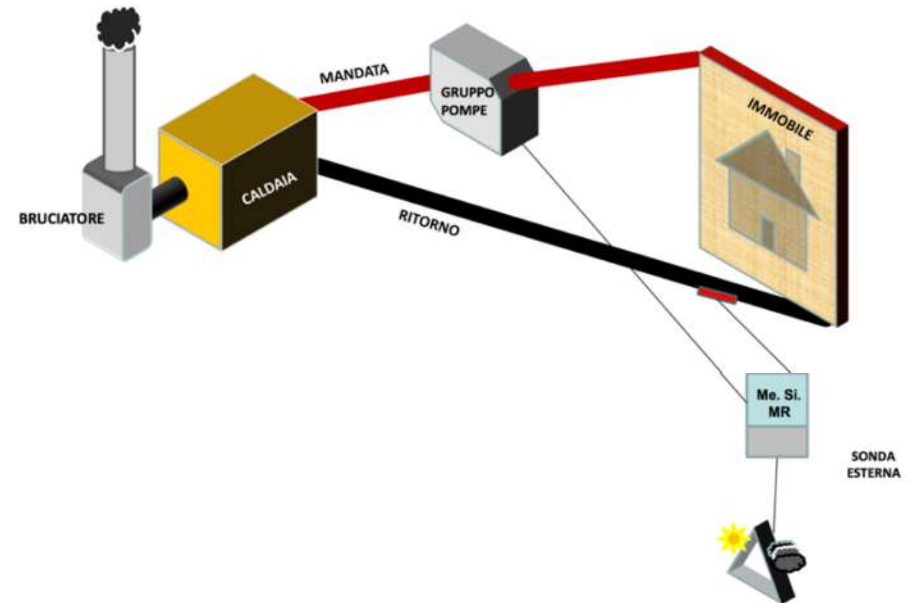
In this context, IRIS offers a unique and simple solution: **the ME.SI system**



## The traditional heating system



## The same heating system with the ME.SI device



The idea is simple: operate the thermal network by optimizing gas and electricity consumption while maintaining a constant "reference" temperature. The ME.SI device will manage in an "intelligent" way with a set of sensors, the right temperature regime.

## What results?

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Our ME.SI device will make it possible to optimize the operation of the thermal network in terms of consumption of primary energy, electricity and also polluting emissions.

- Fuel thermal energy saving **35 - 55%**
- Electricity saving **40 - 65%**
- Reduction of emissions into the atmosphere **40 - 55%**
- Simplification of heating systems with reduced construction and installation costs **- 30%**

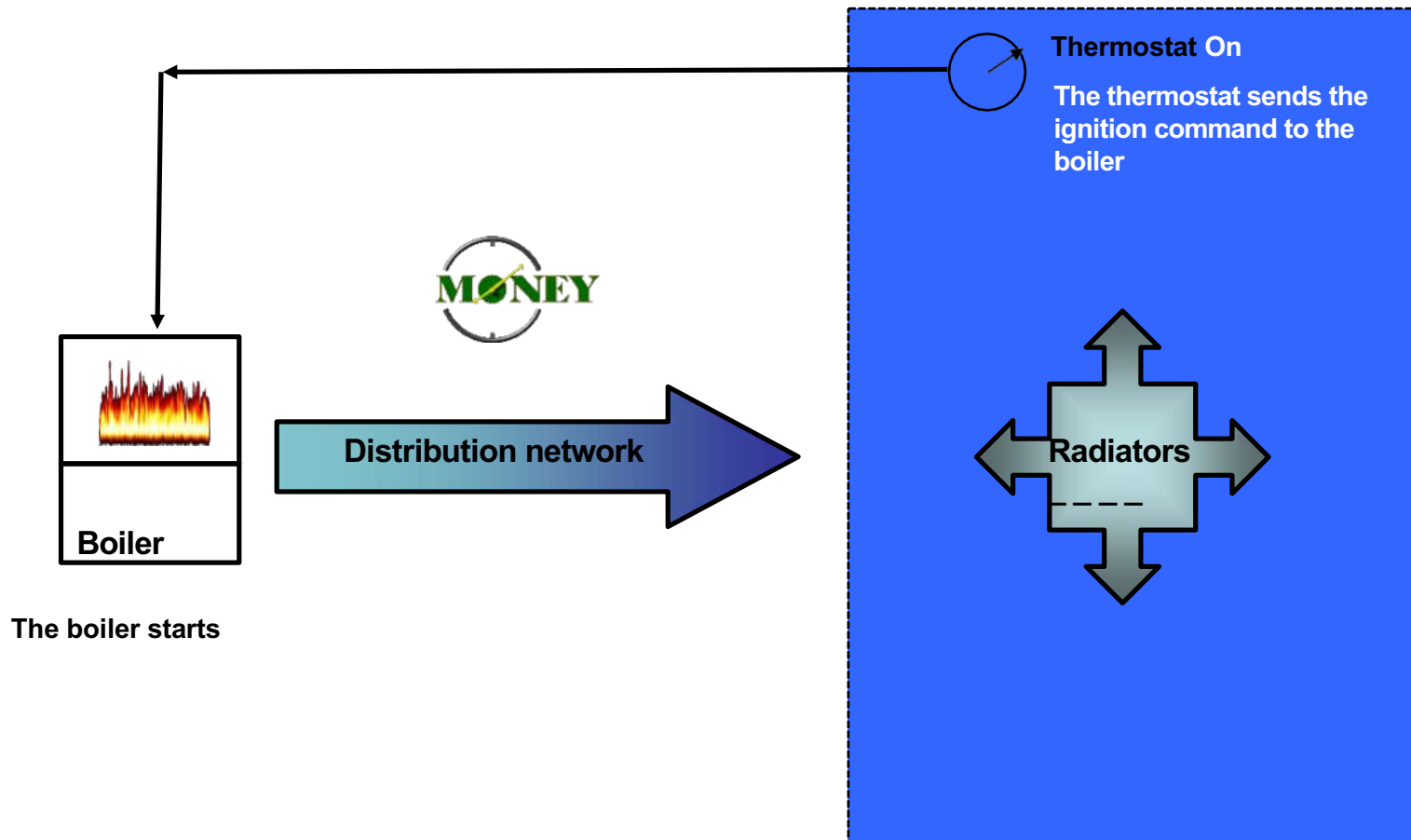


# How does our ME-SI system work?

Without the ME-SI device

## STEP 1

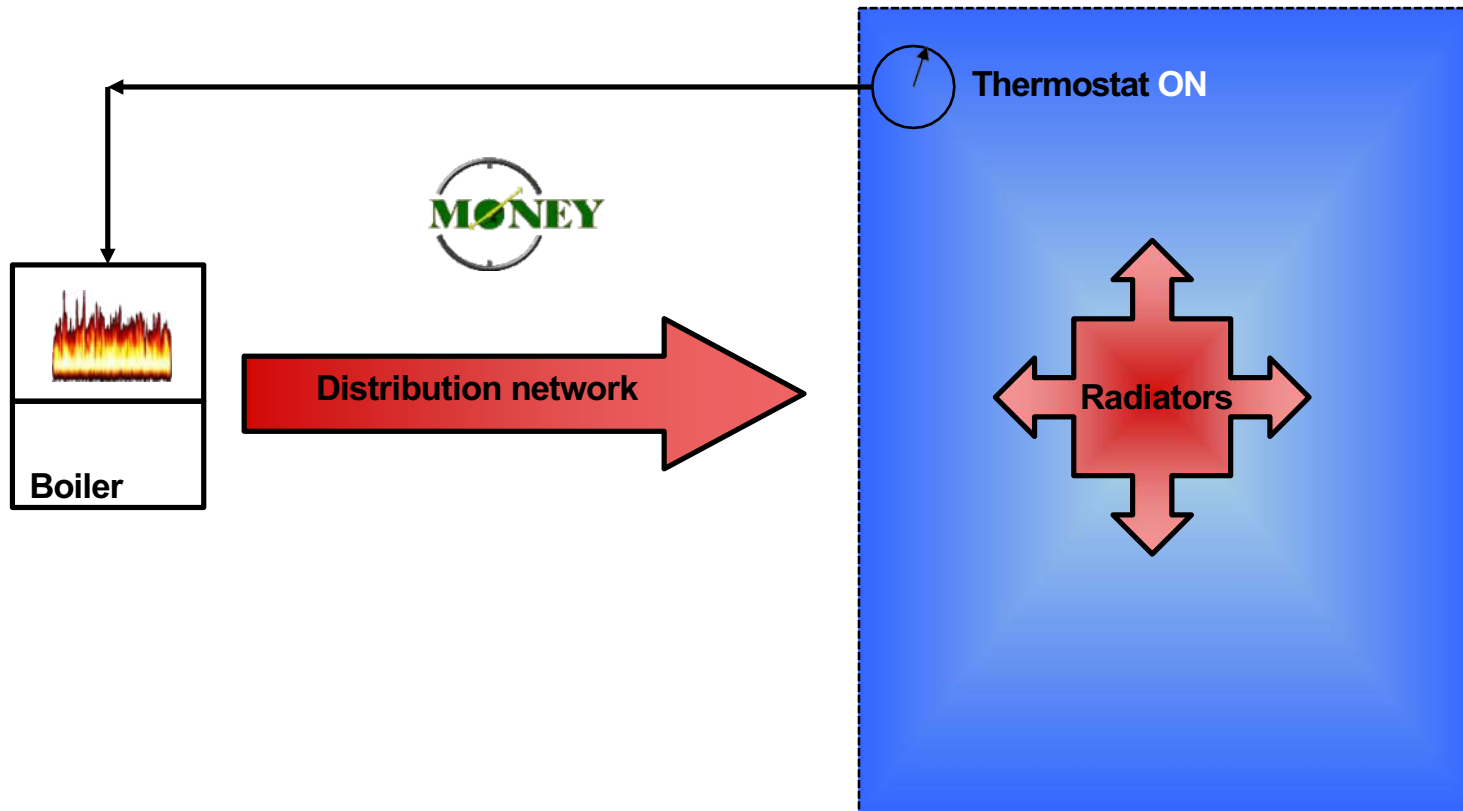
Power up = First moments



# How does our ME-SI system work?

Without the ME-SI device

**2ND STEP**  
After about 3 minutes

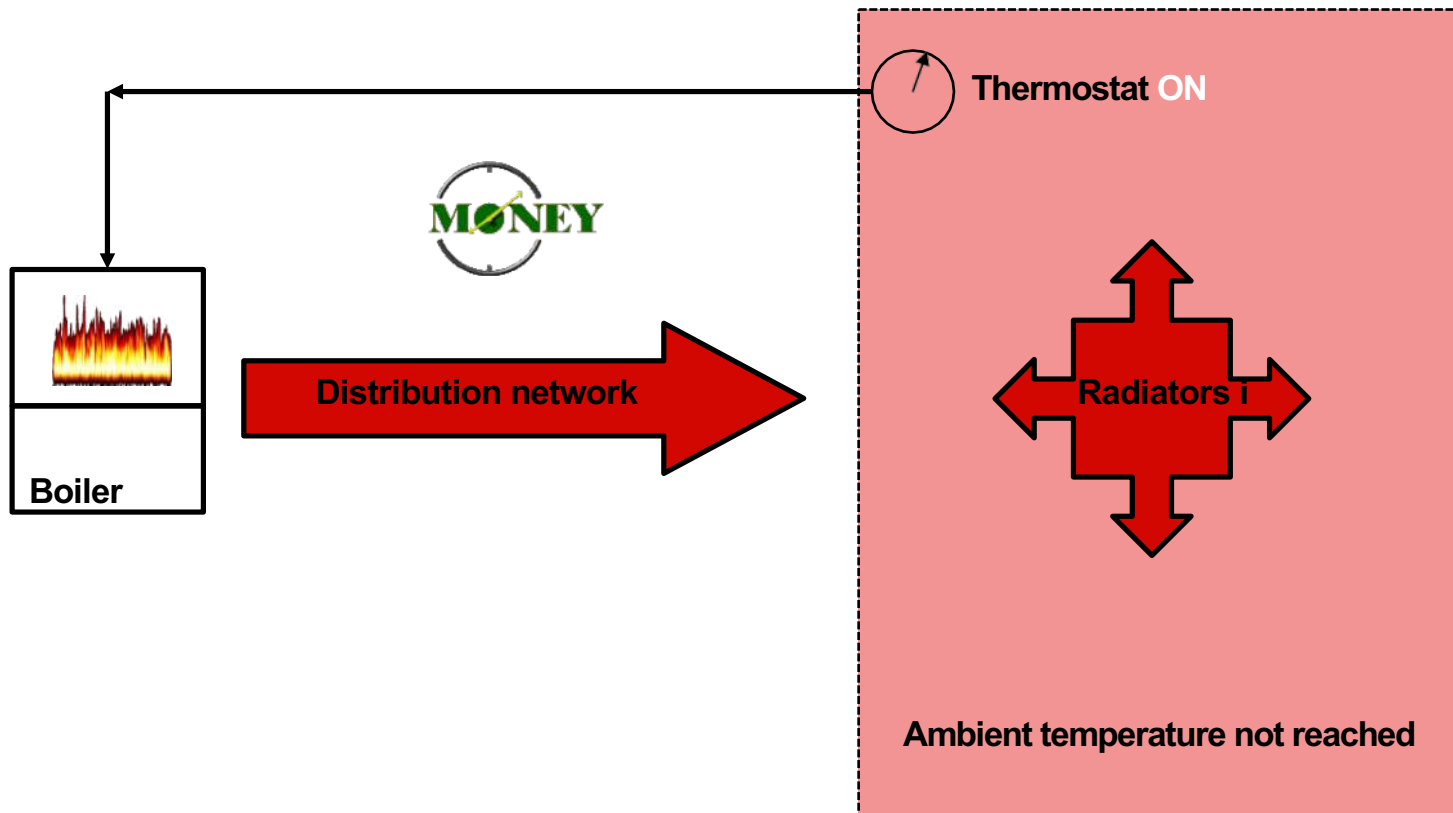


# How does our ME-SI system work?

## STEP 3

After 120 minutes, the boiler room is still at full load with thermostat always ON

Without the ME-SI device



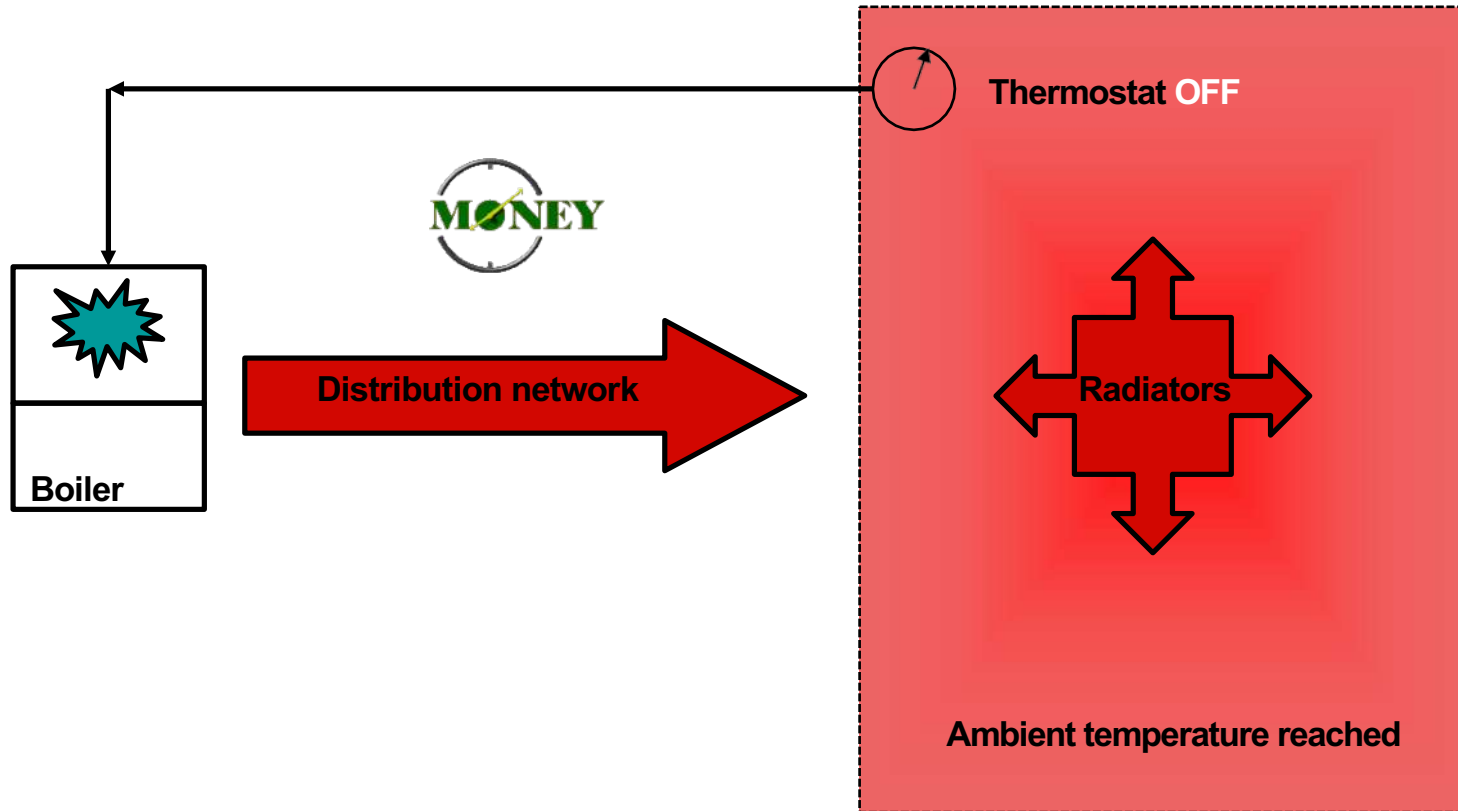


# How does our ME-SI system work?

Without the ME-SI device

## STEP 4

After a few hours, finally, the temperature setpoint of the thermostat is reached and the latter forces the boiler to stop.

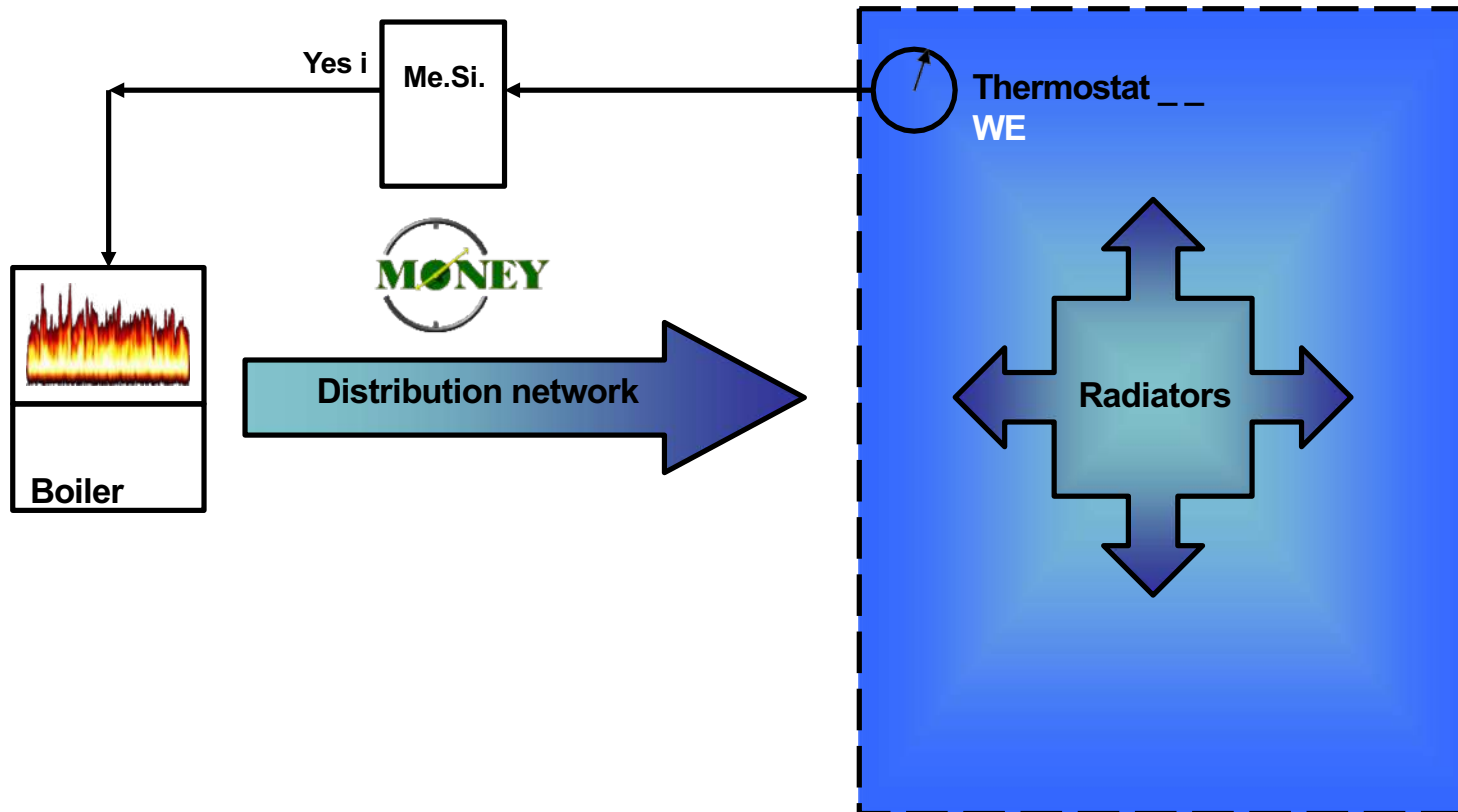


# How does our ME-SI system work?

## STEP 1

Instead of acting on the boiler, the thermostat acts on the ME-SI device which takes care of the management of the boiler

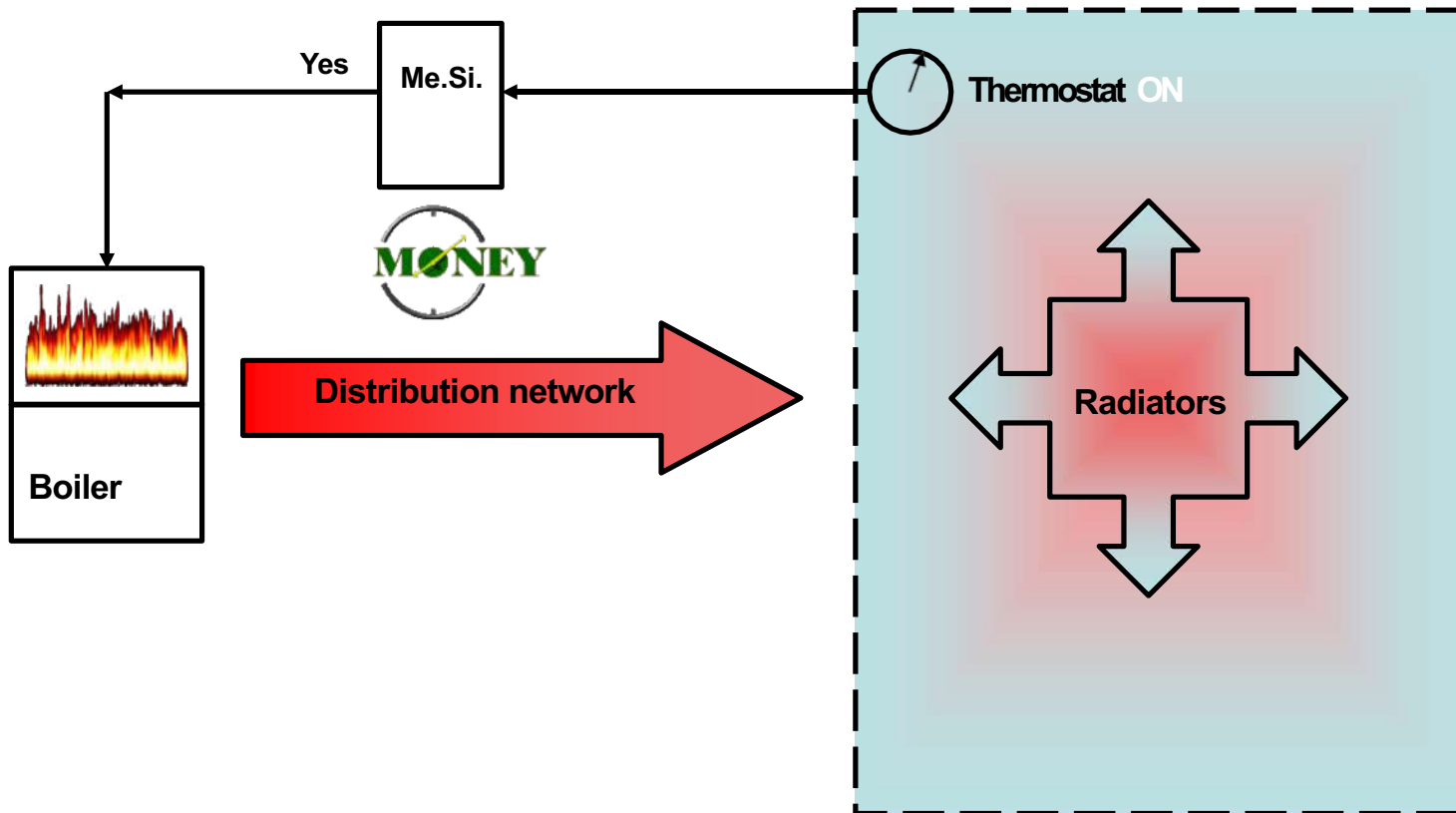
With the ME-SI device



# How does our ME-SI system work?

With the ME-SI device

2ND STEP  
After 3 mins

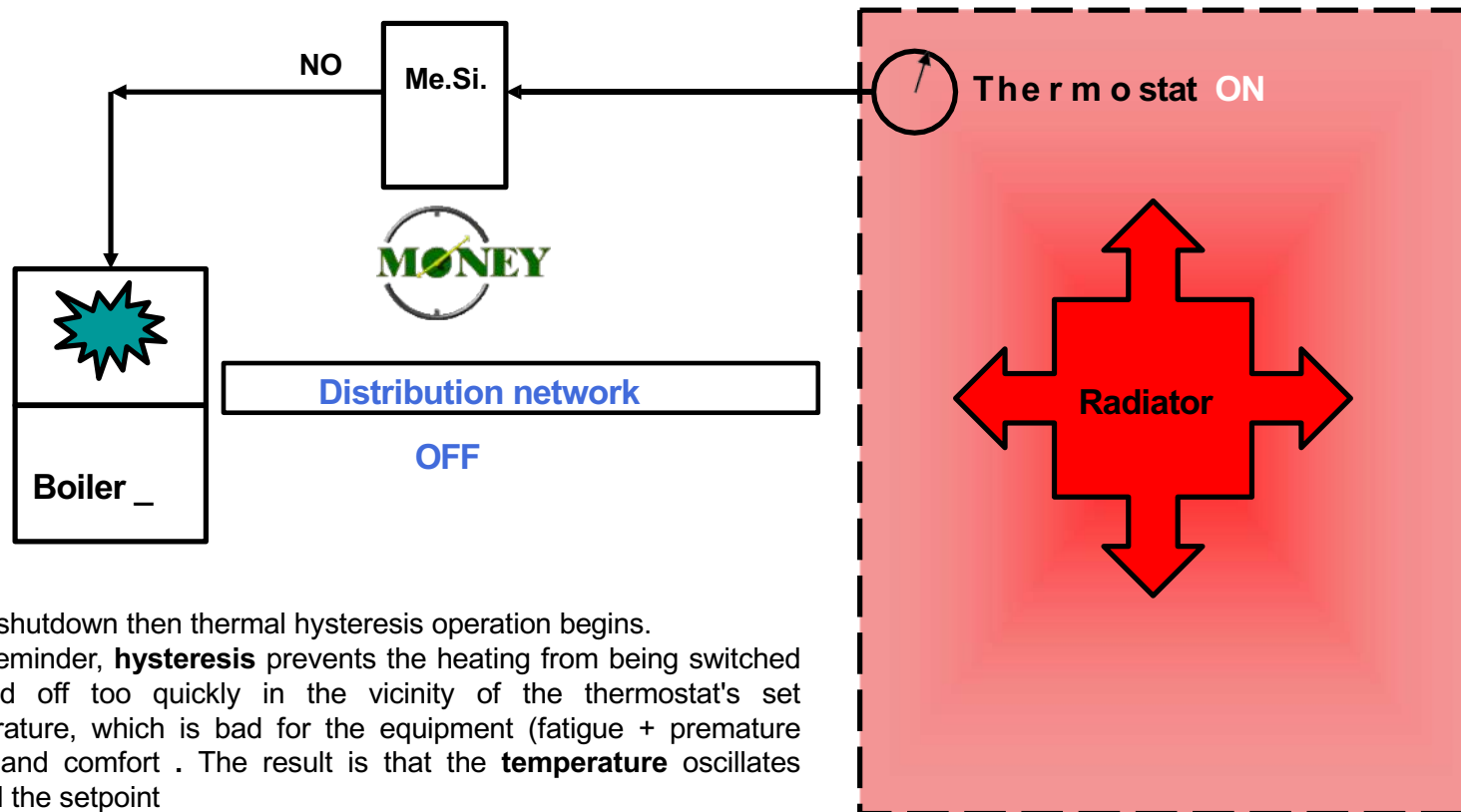


# How does our ME-SI system work?

## STEP 3

After about 12 minutes of walking, our device Me.Si . controls the shutdown of the boiler

With the ME.SI device



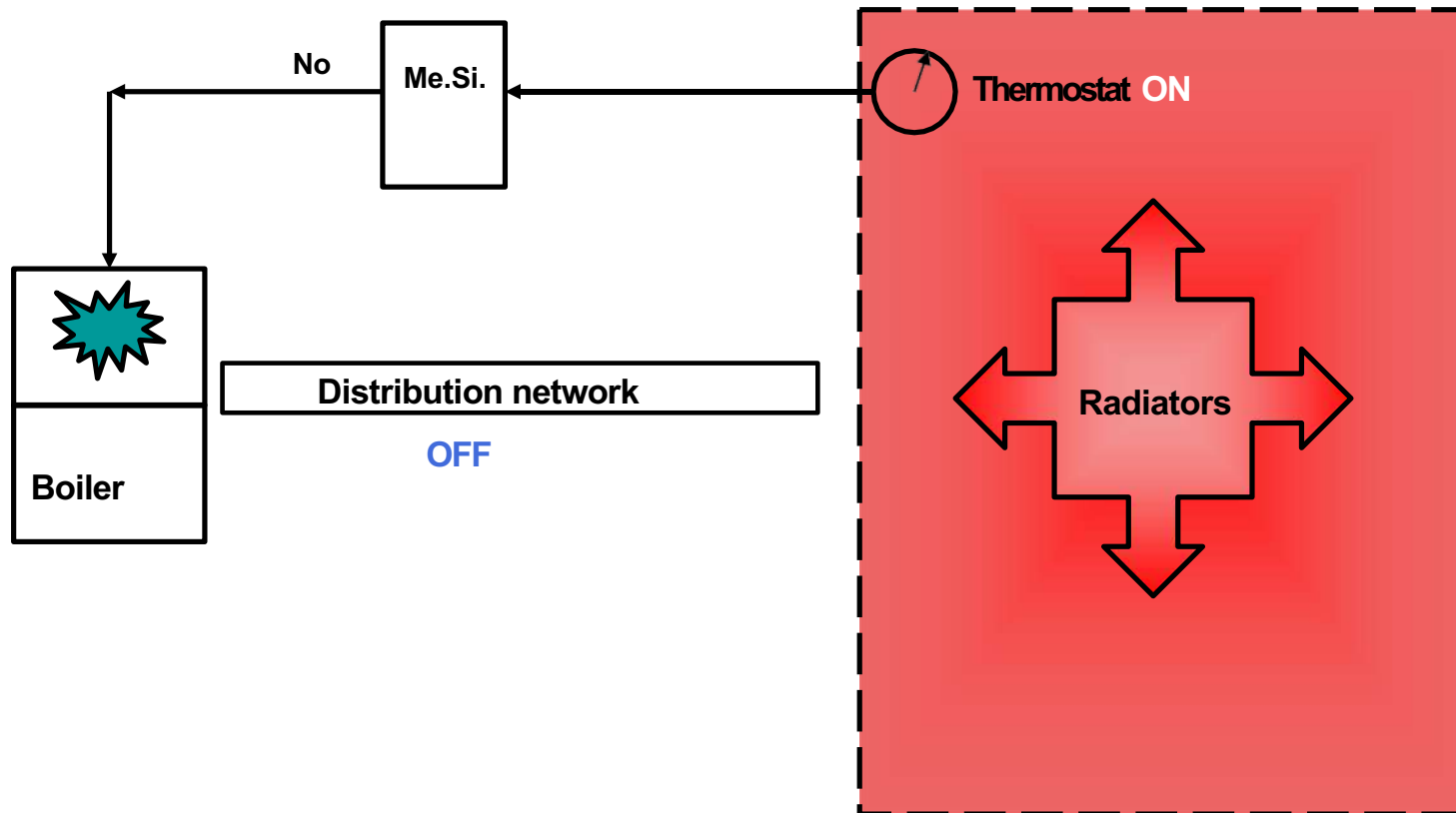
Boiler shutdown then thermal hysteresis operation begins. As a reminder, **hysteresis** prevents the heating from being switched on and off too quickly in the vicinity of the thermostat's set temperature, which is bad for the equipment (fatigue + premature wear) and comfort . The result is that the **temperature** oscillates around the setpoint

# How does our ME-SI system work?

## STEP 4

System status after 20 minutes of boiler shutdown

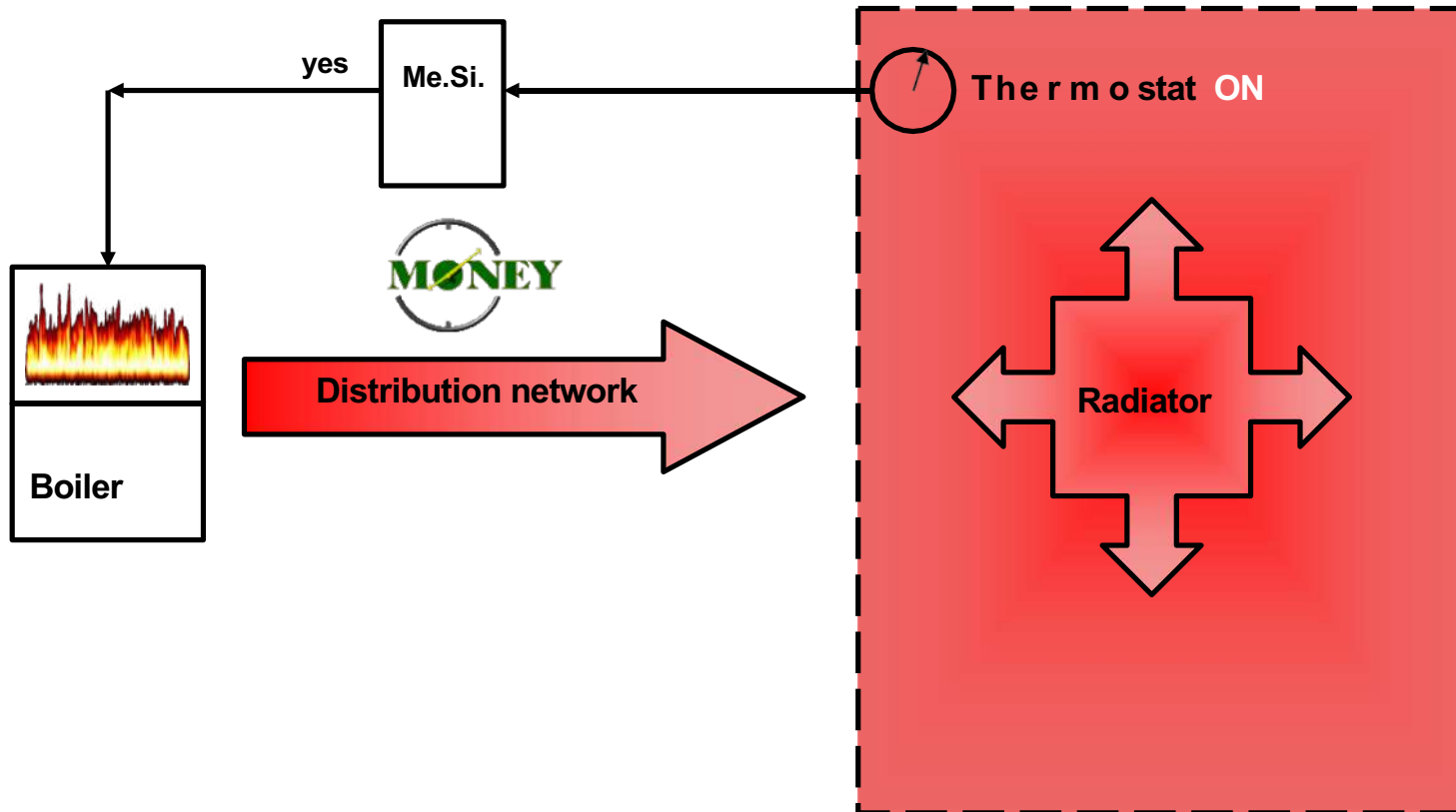
With the ME-SI device



# How does our ME-SI system work?

## STEP 5 The boiler restarts

With the ME-SI device

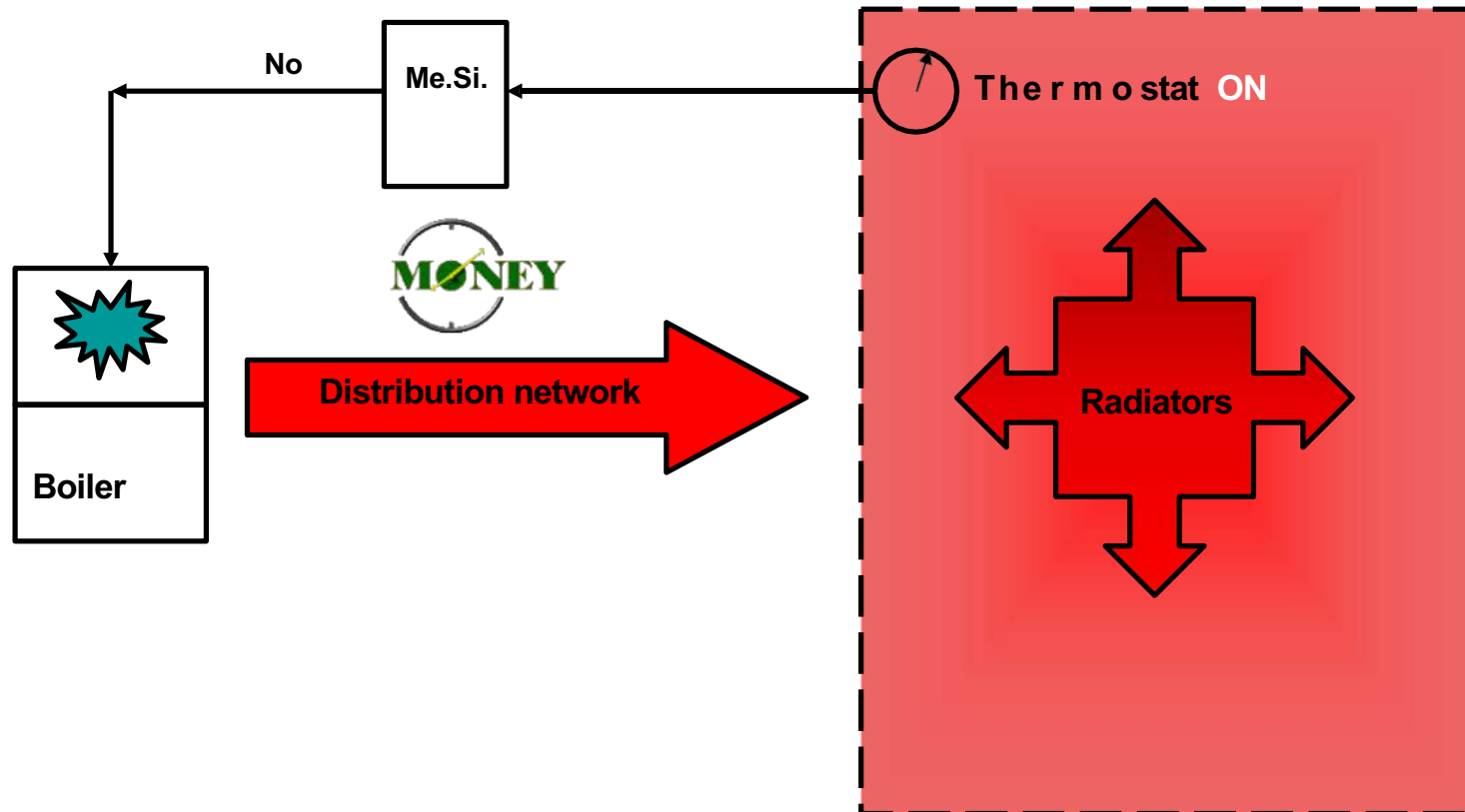


# How does our ME-SI system work?

## STEP 6

After a few minutes, the network reaches the set temperature and the boiler stops again

With the ME-SI device

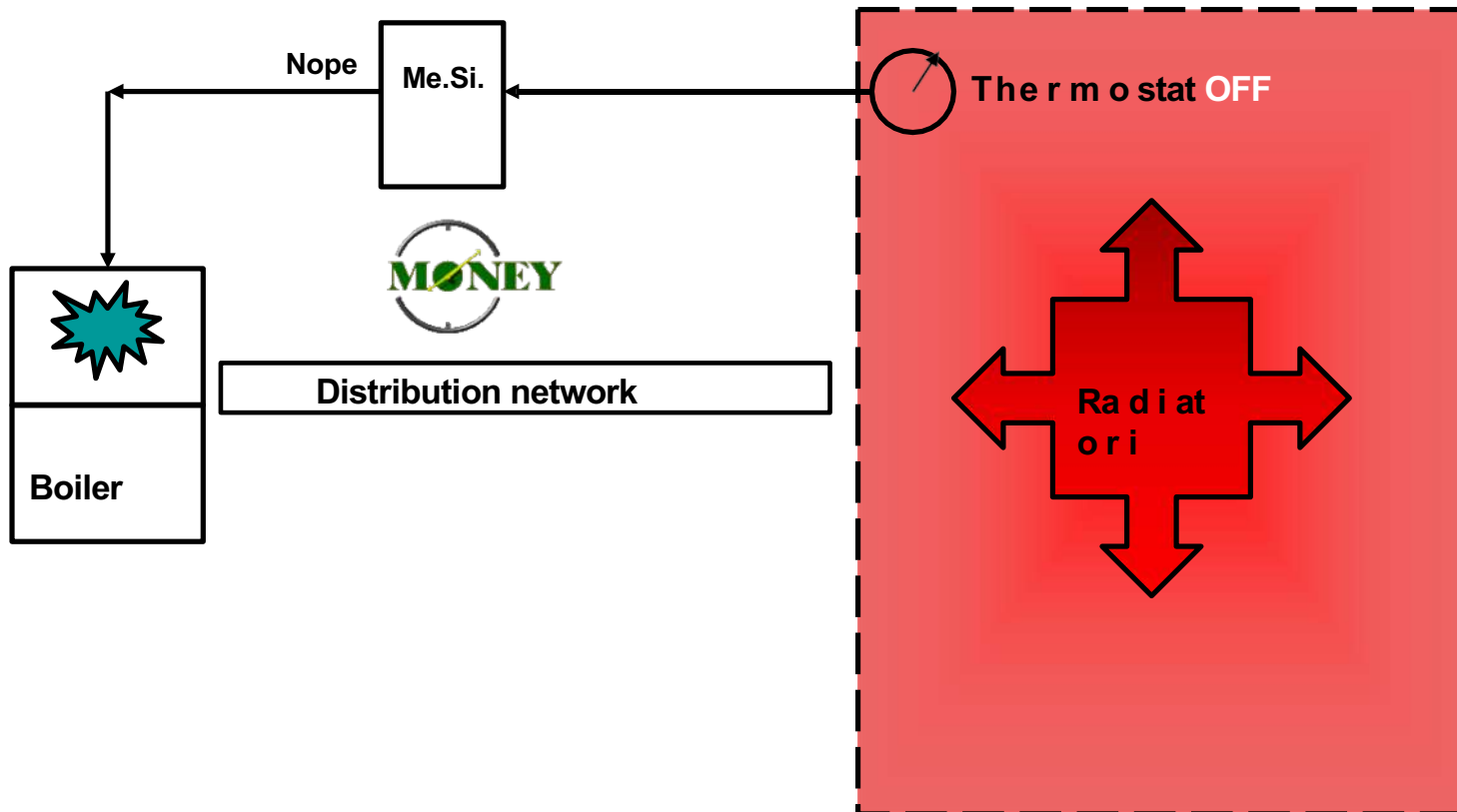


# How does our ME-SI system work?

## STEP 7

The temperature has reached the set value and the boiler is stopped

With the ME-SI device





# Our IT platform

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A web-based platform allows users to check the operation of the installed system and, based on the data collected, the estimated electricity, gas and water savings over a user-defined period.



Operational data is transmitted to a centralized data collection system.

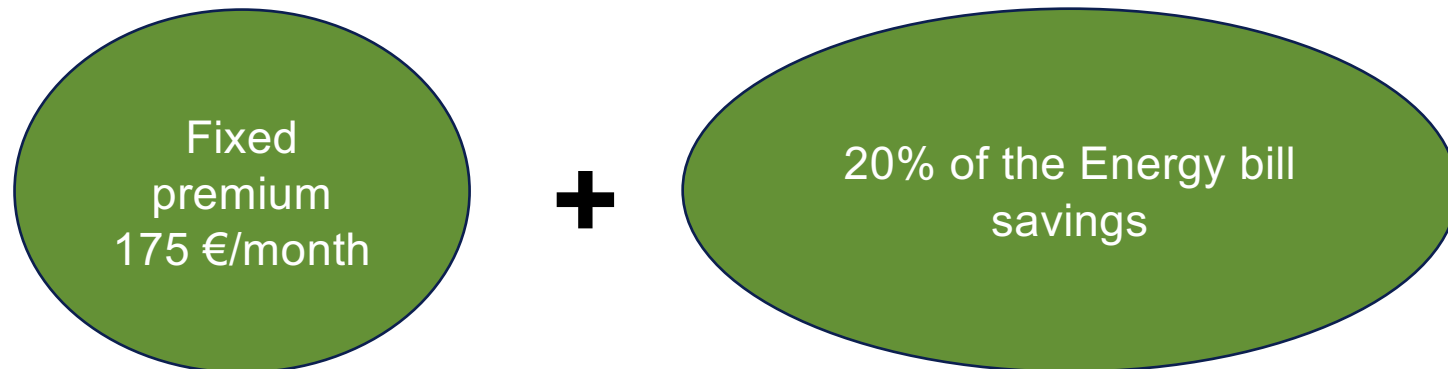


IRIS offers a "turnkey" solution:

- Supply and installation of the ME.SI device
- Operation guarantee
- Implementation of the IT platform

IRIS offers an "operational leasing" contract including supply, installation, manufacturer's warranty and the IT platform.

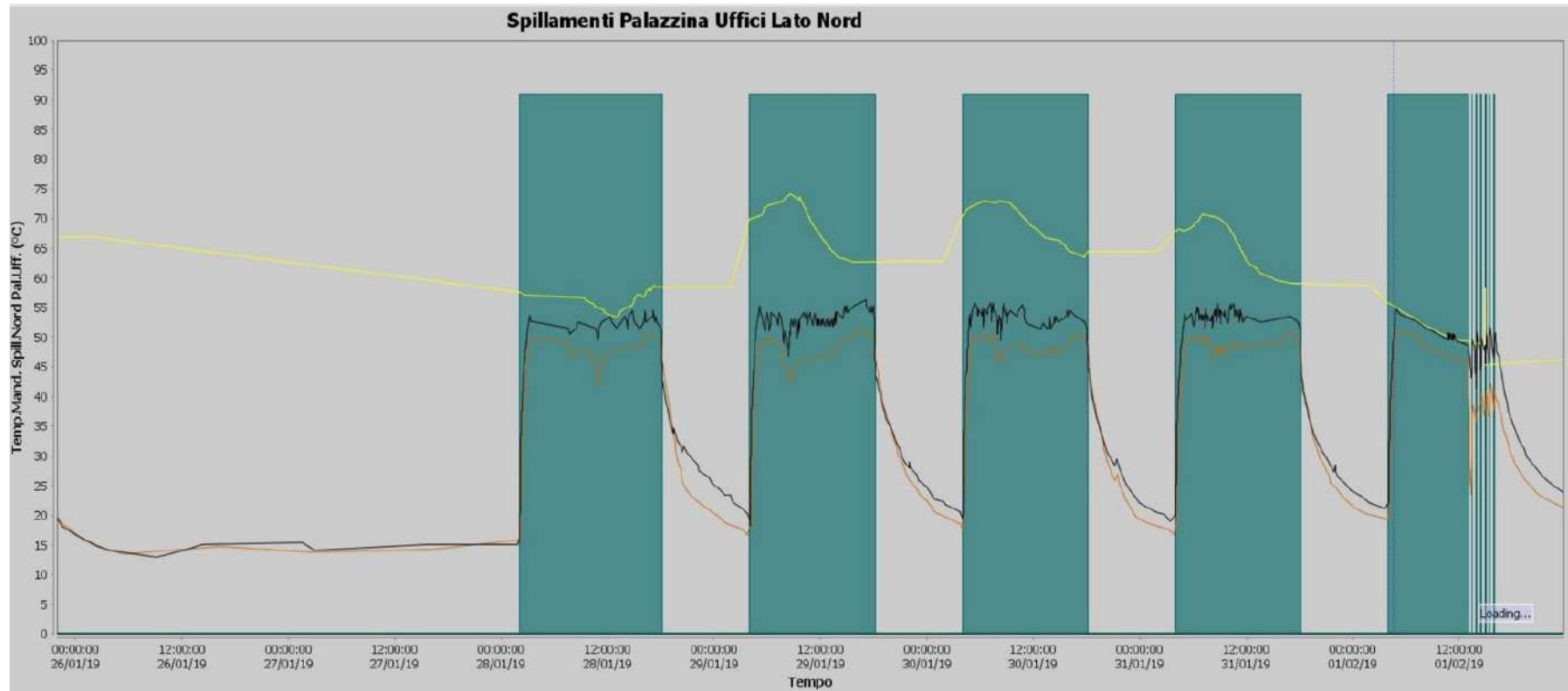
The amount is :



# CASE STUDY – EXISTING HOSPITAL BOILER ROOM

*Without the ME.SI device*

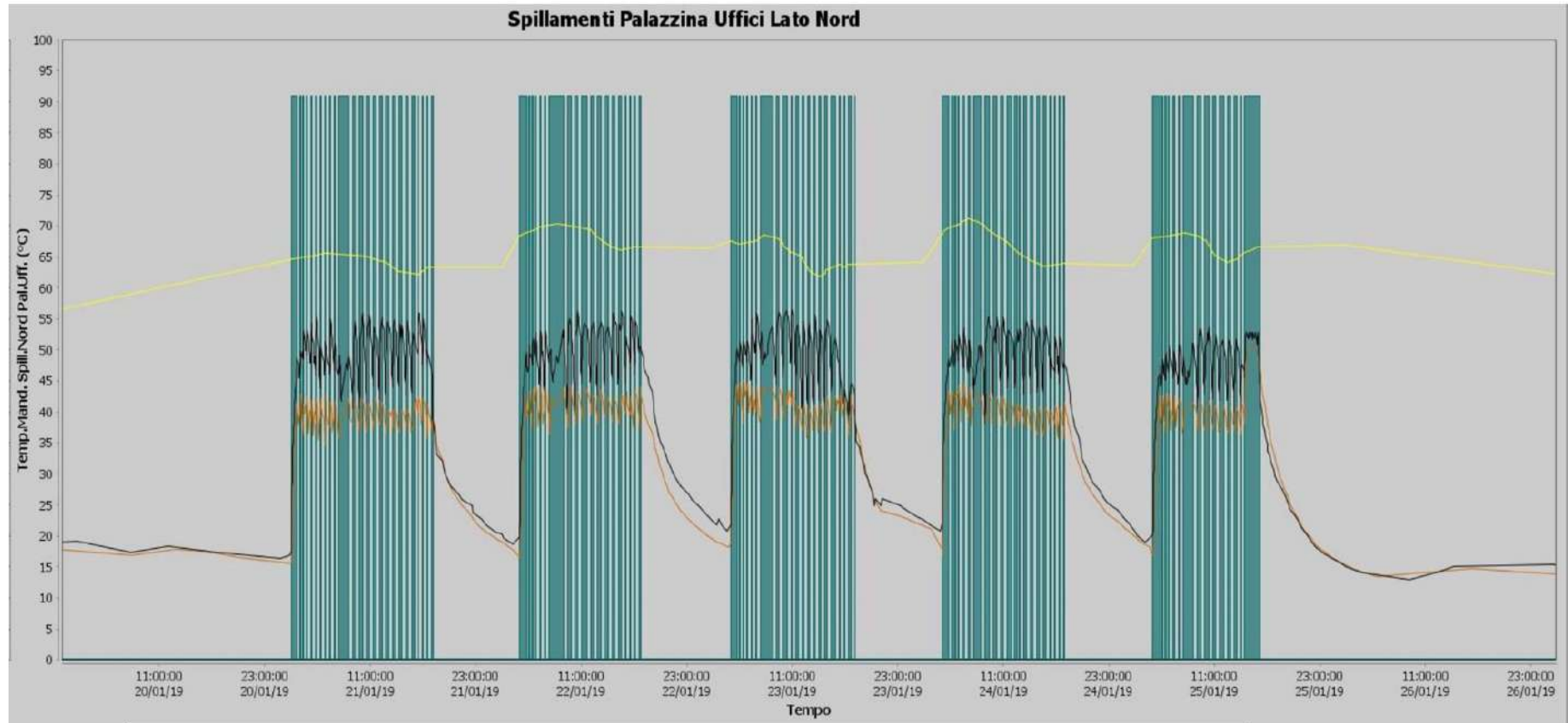
- Heating temperatures
- Circulation pump running time



# CASE STUDY – EXISTING HOSPITAL BOILER ROOM

With the ME.SI device

- Heating temperatures
- Circulation pump running time



**PALAZZINA UFFICI - LARGO FRANCESCO VITO 1 - 00168 ROMA**

## Consumo orario

CONTATORE\_AI\_04\_GR07: Consumo Energia termica lato nord Palazzina Uffici [MWh]

**SENZA DISPOSITIVO**

	01.00	02.00	03.00	04.00	05.00	06.00	07.00	08.00	09.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	00.00	CONSUMO	Valore Medio
28/01/2019	0	0	0,12	0,08	0,07	0,08	0,07	0,06	0,07	0,06	0,06	0,05	0,06	0,06	0,05	0,06	0,07	0,07	0	0	0	0	0	0	1,09	0,045
29/01/2019	0	0	0	0	0,13	0,1	0,08	0,06	0,09	0,06	0,07	0,08	0,07	0,08	0,09	0,08	0,1	0,11	0	0	0	0	0	0	1,2	0,05
30/01/2019	0	0	0	0	0,16	0,13	0,12	0,11	0,08	0,1	0,08	0,08	0,1	0,09	0,09	0,09	0,12	0,13	0	0	0	0	0	0	1,48	0,062
31/01/2019	0	0	0	0	0,17	0,15	0,13	0,1	0,1	0,09	0,08	0,1	0,1	0,09	0,1	0,09	0,13	0,13	0,02	0	0	0	0	0	1,58	0,066
01/02/2019	0	0	0	0	0,17	0,13	0,12	0,11	0,08	0,08	0,07	0,07	0,07	0,02	0,04	0,04	0,01	0	0	0	0	0	0	0	1,01	0,042
02/02/2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03/02/2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
																									<b>6,36 MWh</b>	

**CON DISPOSITIVO**

	01.00	02.00	03.00	04.00	05.00	06.00	07.00	08.00	09.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	00.00	CONSUMO	Valore Medio
04/02/2019	0	0	0,08	0,08	0,04	0,02	0,05	0,04	0,02	0,06	0,03	0,04	0,02	0,04	0,03	0,04	0,04	0,04	0	0	0	0	0	0	0,67	0,028
05/02/2019	0	0	0	0	0,11	0,06	0,03	0,04	0,04	0,05	0,04	0,04	0,02	0,04	0,04	0,03	0,04	0,04	0	0	0	0	0	0	0,62	0,026
06/02/2019	0	0	0	0	0,11	0,06	0,04	0,03	0,04	0,04	0,02	0,05	0,02	0,04	0,02	0,04	0,04	0,05	0	0	0	0	0	0	0,6	0,025
07/02/2019	0	0	0	0	0,1	0,07	0,04	0,04	0,04	0,05	0,04	0,03	0,02	0,04	0,04	0,02	0,05	0,02	0	0	0	0	0	0	0,6	0,025
08/02/2019	0	0	0	0	0,1	0,07	0,04	0,02	0,04	0,04	0,03	0,04	0,02	0,04	0,03	0,04	0,02	0	0	0	0	0	0	0	0,53	0,022
09/02/2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/02/2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
																									<b>3,02 MWh</b>	

**NOTE**

SETTIMANA DAL 28/01/2019 AL 03/02/2019: DISPOSITIVO NON INSERITO

SETTIMANA DAL 04/01/2019 AL 10/02/2019: DISPOSITIVO INSERITO

CONDIZIONI METEOROLOGICHE SIMILI (analoghe temperature minime e massime rilevate nelle due settimane)

L'UTENZA SERVITA NELLE DUE SETTIMANE E' IDENTICA

**RISPARMIO DAL 10/11/2018 AL 10/04/2019**

RISPARMIO ENERGETICO	<b>80,16</b>	MWh
RISPARMIO ECONOMICO	<b>14.429</b>	Euro, civa

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