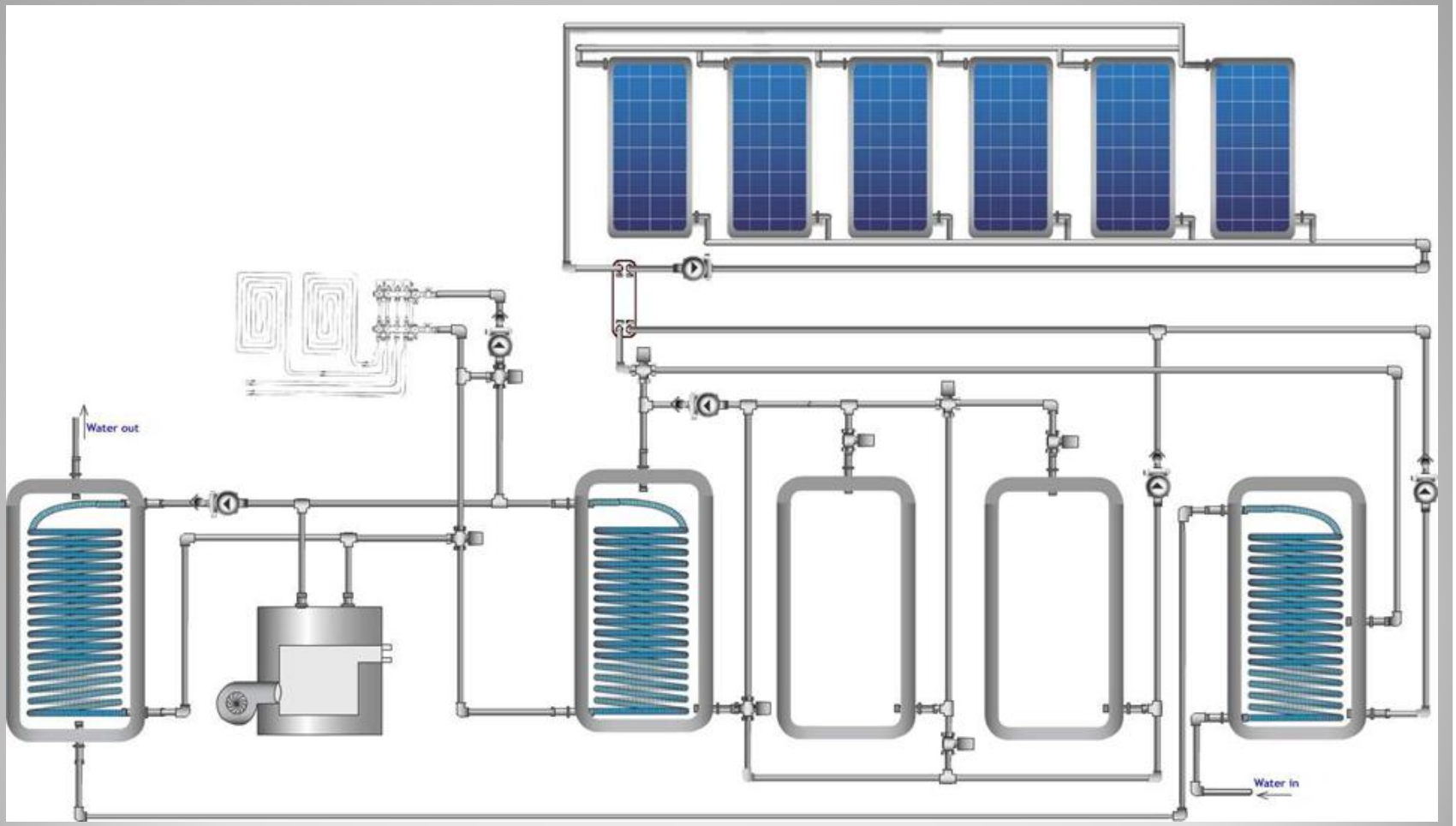
DEDICATED SOLAR HEATING SYSTEM

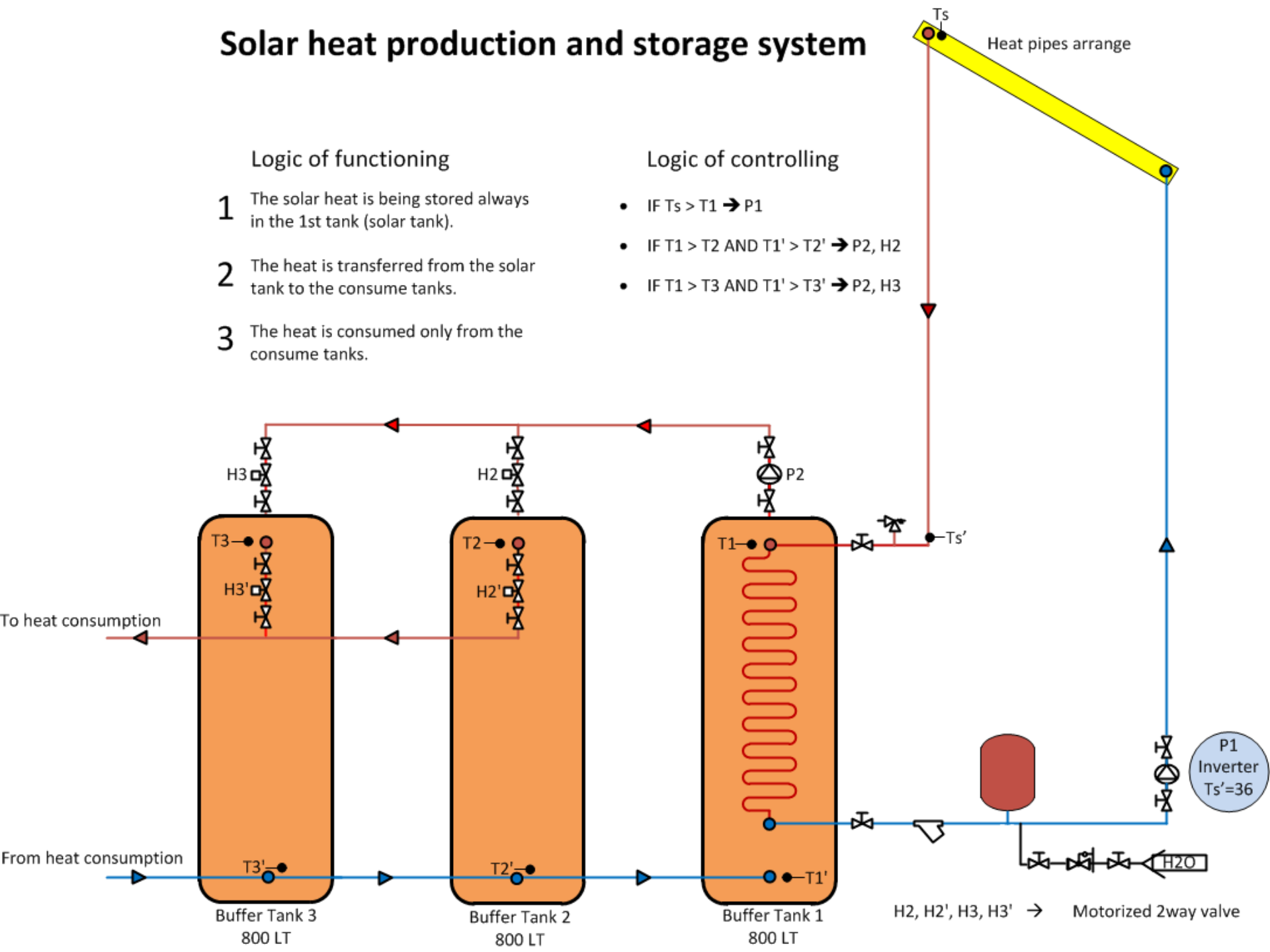
The empower project

6. Ηλιοθερμία - Συστοιχία κλειστών δοχείων

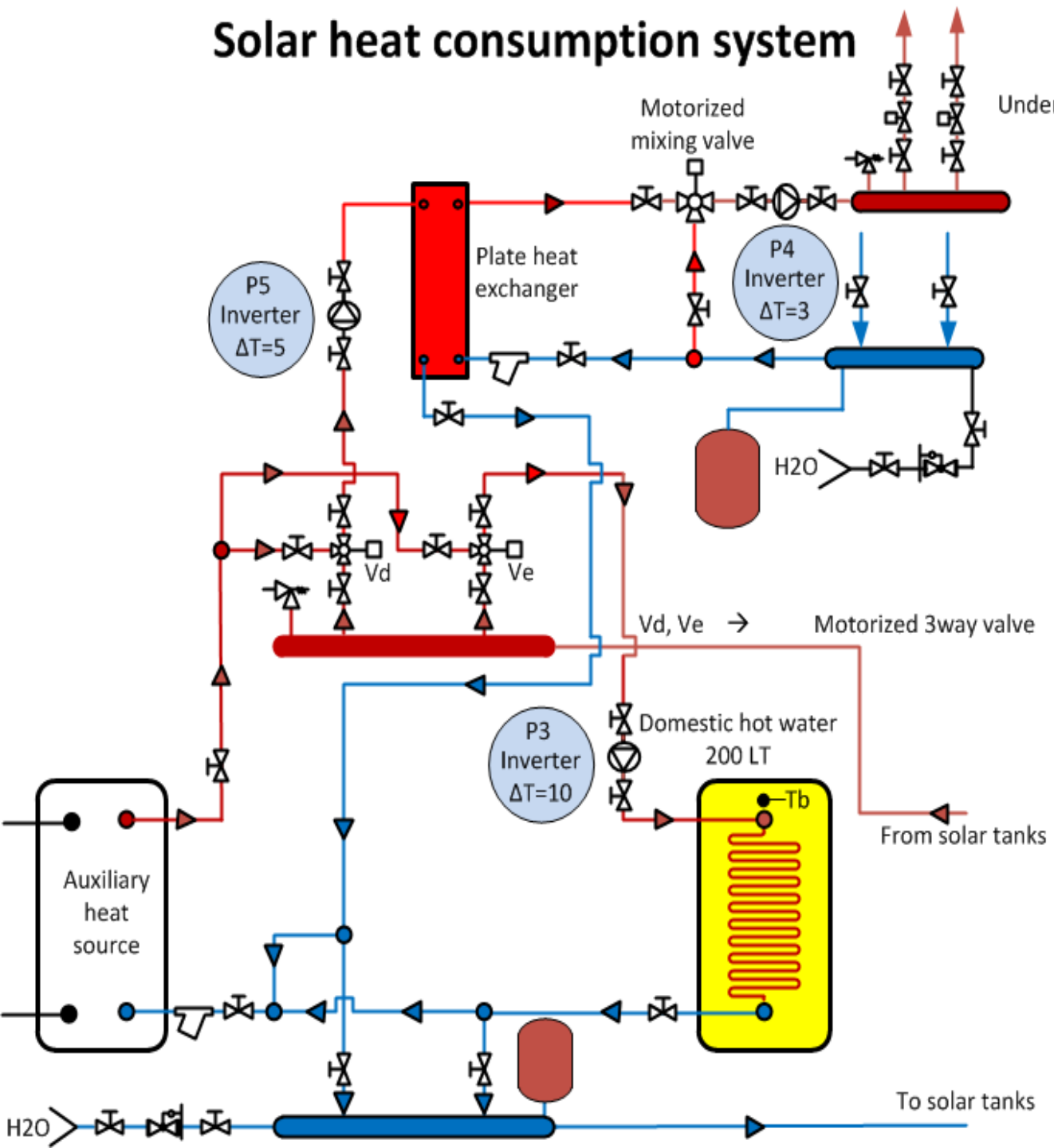


Ένα ηλιακό σύστημα για υψηλή κάλυψης θέρμανσης και παραγωγής ΖΝΧ. Δίπλωμα ευρεσιτεχνίας ΟΒΙ 2010. Επιδοτούμενο ερευνητικό πρόγραμμα από ΕΕ & ΓΓΕΤ 2011-2013.

Solar heat production and storage system



Solar heat consumption system

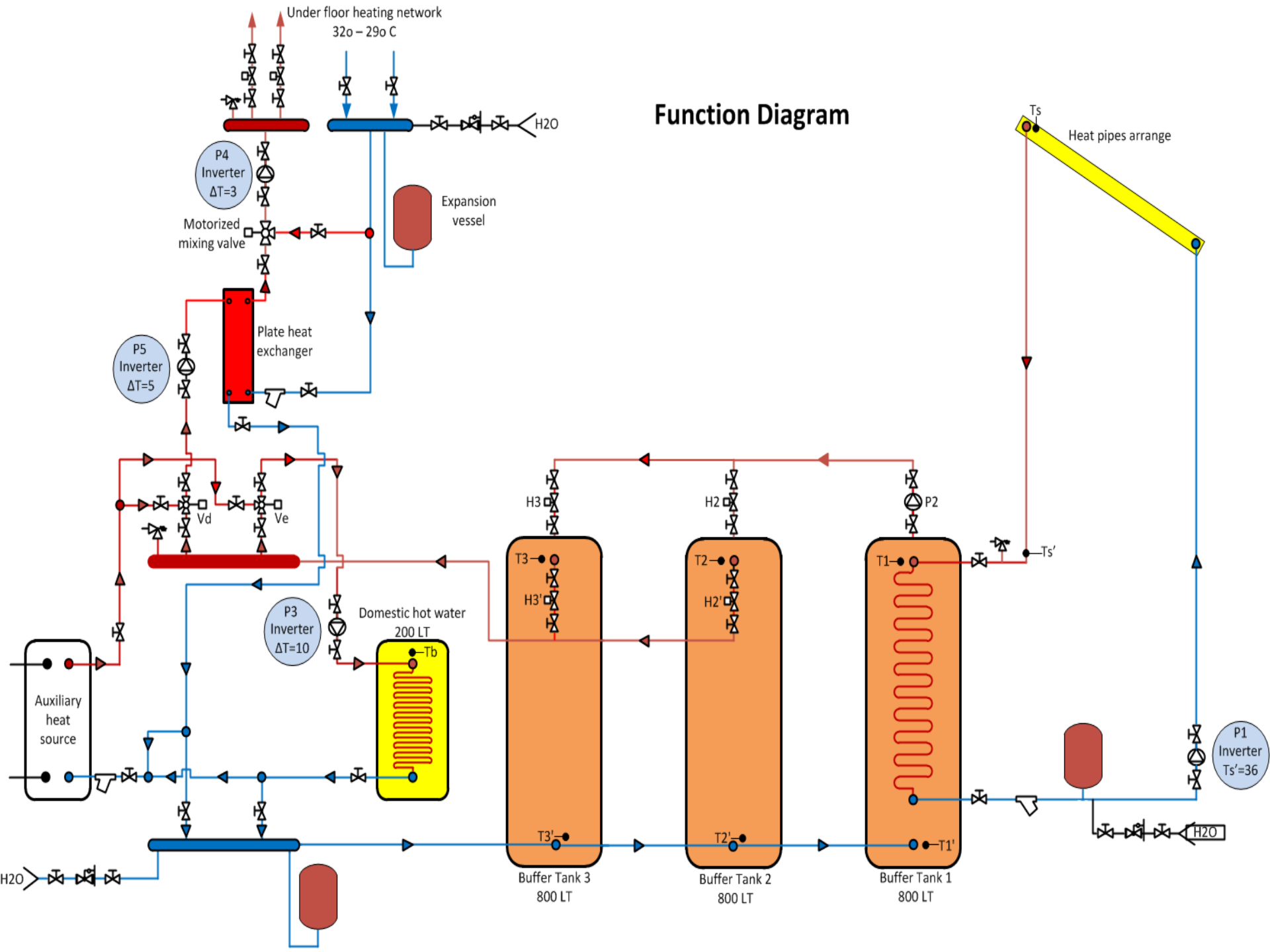


Logic of functioning

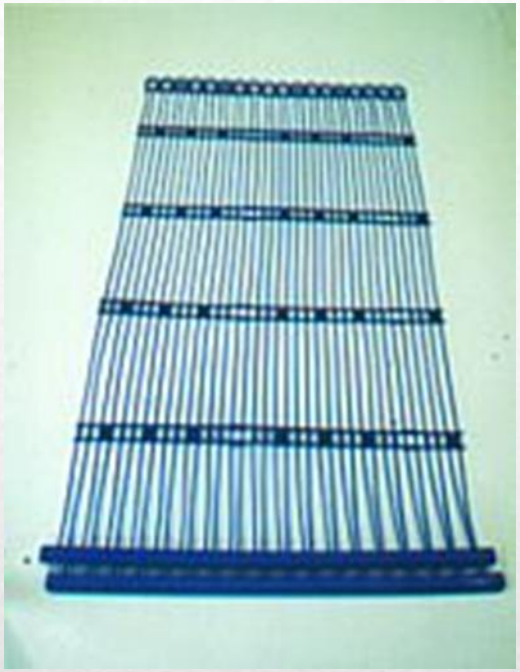
1. The heat is taken from the solar tanks as long as the T' > T set point.
2. The room heating system has priority to the domestic hot water system.
3. The heat is consumed always by constantly ΔT (Ts – Tr).

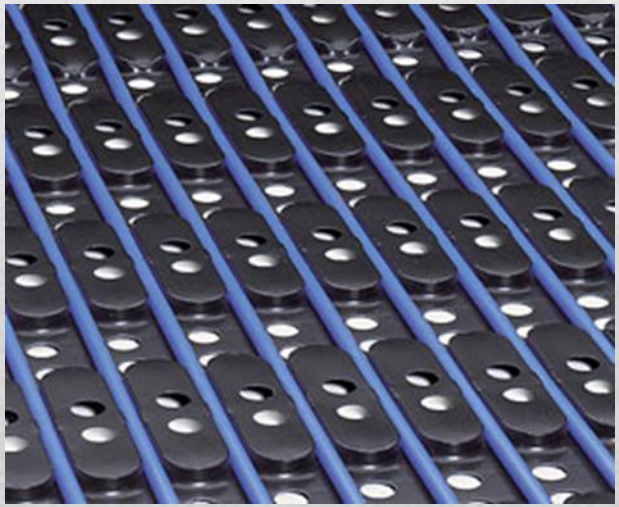
Logic of controlling

- IF T3' > 35 → Vd, H3'
- IF T3' > 40 → Ve
- IF T2' > 35 → Vd, H2'
- IF T2' > 40 → Ve
- IF Tb' < 40 → P3


Function Diagram
Under floor heating network
32o – 29o C
H2O
P4
Inverter
ΔT=3
Motorized
mixing valve
Expansion
vessel
Plate heat
exchanger
P5
Inverter
ΔT=5
Vd
Ve
P3
Inverter
ΔT=10
Domestic hot water
200 LT
Tb
Auxiliary
heat
source
H2O
H3
H2
P2
T3
H3'
T2
H2'
T1
Ts'
T3'
T2'
T1'
Buffer Tank 3
800 LT
Buffer Tank 2
800 LT
Buffer Tank 1
800 LT
Ts
Heat pipes arrange
P1
Inverter
Ts'=36
H2O

The Under floor Heating System

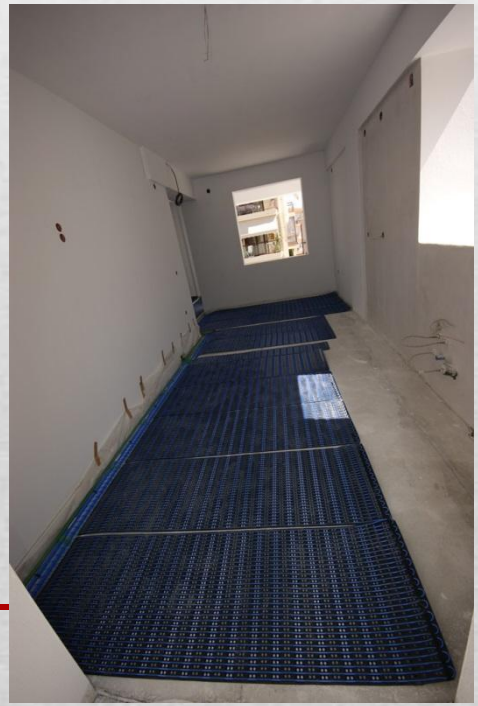




BioClina

Das innovative
Heiz- und Kühlsystem
für Wohngebäude.

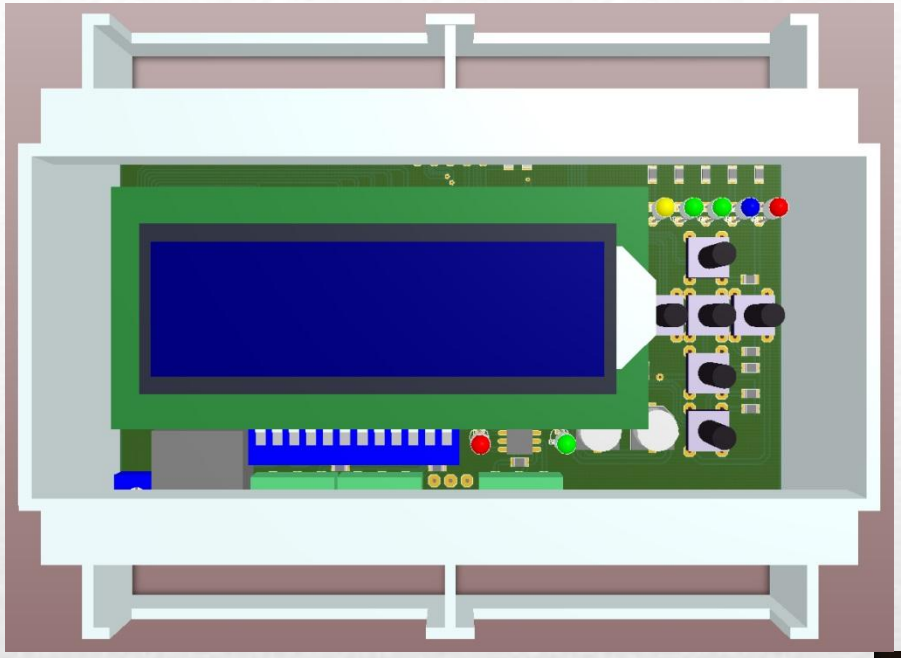
The Under floor Heating System



The Boiler Room

The Heat pipes

The Controllers



The Building

2012 Kozani
GREECE

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Ιδιοκτήτης : κος Λαμπαδάς Αθανάσιος