



Newsletter No.4

PILOT IN SLOVENIA: Primary School and Sports centre, Lapajnetova 50, 5280 Idrija

Basic facts and initial state:

- o 44 classrooms in primary school and 2 gyms in neighbouring sports centre building
- o Heating system includes 275 radiators in both buildings
- o Heating energy supplied from the boiler room, connected to the buildings, which supplies many other buildings with heat energy
- o Heating regulated by boiler automation controlling mixing valve, one for each building

Total cost of the investment:

214.000 EUR, of which
160.500 EUR funded from
the Interreg Danube
Transnational Programme

3Smart investment:

- o Changed valves on all radiators and hydraulic balancing of the system
- o 162 radiators equipped with wireless controlled heads and temperature sensor for returning water. The rest of radiators in utility rooms, hallways and some offices equipped with thermostat heads
- o Room temperature sensor and presence detector installed in every classroom and gym
- o Established wireless network to connect radiator valves and all sensors to the gateway which is connected to the 3Smart EMS database server
- o Installed 30 kW photovoltaic plant with basic weather station on the roof of the primary school and connected to database
- o Installed cogenerator of 90 kW heating and 50 kW electrical power in the boiler room next to the buildings
- o PC database server installed, new optical connection between database server, internet, gateway and boiler room installed and separate IP address for 3Smart communications ordered
- o Domestic hot water tank 4.000 l upgraded with 35 kW electrical heaters
- o GUI for heating control installed



Application of the 3Smart tool on-site:

- o Coordinated
 - I. **(building zone level)** predictive control of energies used for heating individual classrooms
 - II. **(central HVAC system level)** predictive control of starting temperatures for the heating medium for the building, and shaping optimal energy-exchange profile with the district heating grid
 - III. **(microgrid level)** predictive control of CHP output energy and DHW tank heaters as controllable load that implements control of energy exchange profile with the electricity grid including demand response which maintain comfort as required by the end-users and minimize the building energy costs
- o Auxilliary prediction and estimation procedures which as a side-effect facilitate and enhance building maintenance
- o Interfacing procedures to implement computed commands on existing and newly introduced actuating equipment

Expected effect:

Significant decrease of building operational costs;
Improving comfort for end-users;
Achieve feasibility for the EMS model to expand to other municipality-owned buildings



Public presentation
will be held on:
14 November 2019

SAVE THE DATE

**Please follow
further news
regarding the
event on 3Smart
web page**

Basic facts and initial state:

- Total cost of the investment:** 21. 000 EUR, of which 17.850 EUR funded from the Interreg Danube Transnational Programme

3Smart investment:

- [illegible]

Expected effect: More efficient planning and operation of the distribution network, concept for the methodology to encourage the end-users to assist the system with the help of flexibility services for the DSO and reduction of end-users' electricity bills