

TAKING
COOPERATION
FORWARD



European Union
European Regional
Development Fund



Energy Agency of Podravje - Institution for Sustainable Energy Use



Energy efficiency in public buildings in Upper Podravje region and collaboration with the consumers



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Energy management

- ☐ information, advice and training on energy management issues,
- ☐ support for the implementation of local/regional energy plans,
- ☐ energy audits of public and private buildings,
- ☐ raising awareness on energy efficiency, renewable energy sources and transport issues,
- ☐ search for energy-management incentive funds at national and international level.

Rational Use of Energy

- ☐ information and training of public and economic actors,
- ☐ raise public awareness,
- ☐ dissemination of good EU practices at local and cross border level,
- ☐ assistance to local actors to implement EU directives,

Encourage investment

- ☐ cooperate in projects of R&D&I,
- ☐ promote and implement new financial models for investments (contracting).



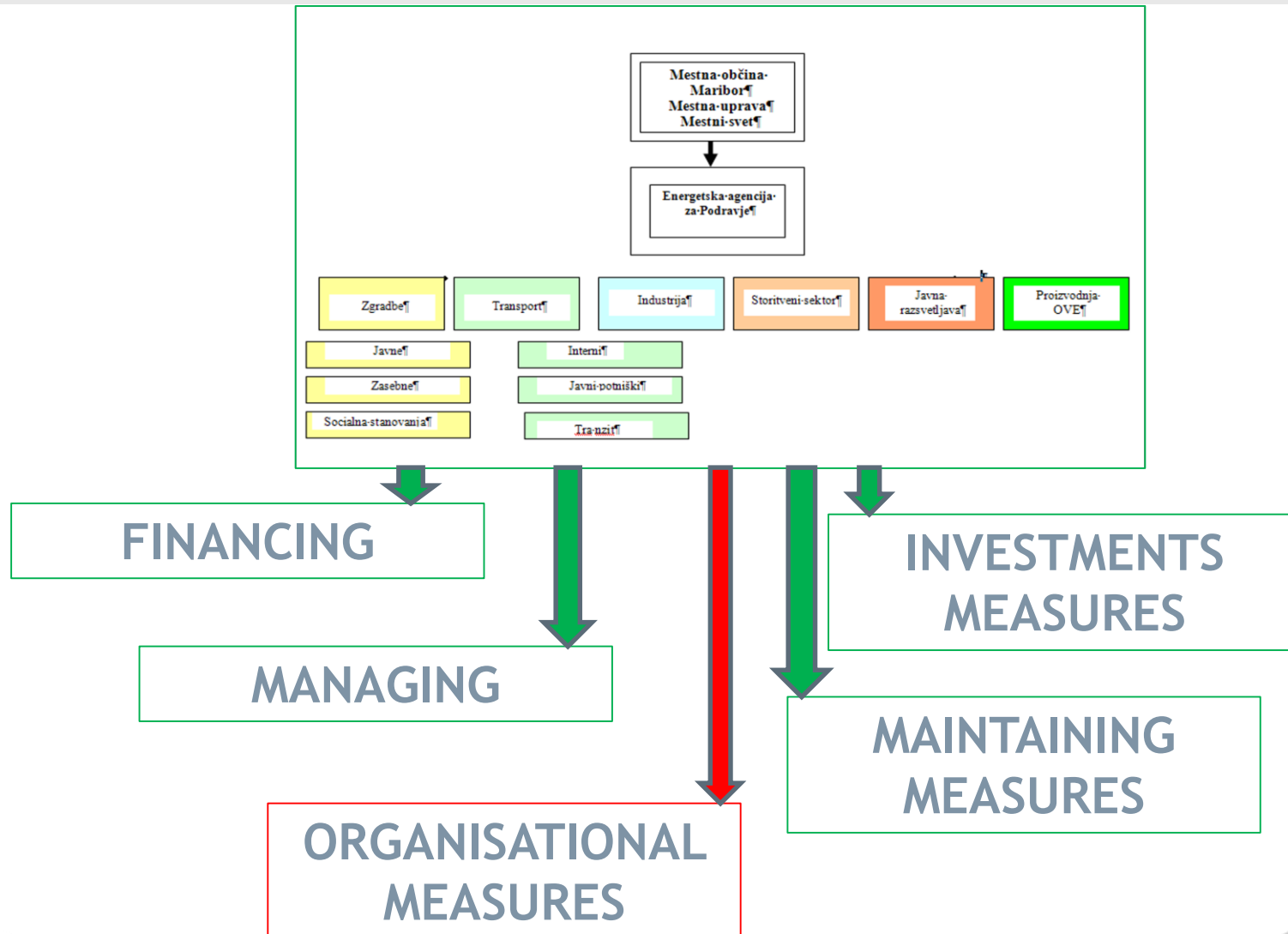
ENERGY MANAGEMENT IN THE MUNICIPALITIES



- ❑ **Plan** - energy audits, analysis, action plans, responsibility
- ❑ **Do** - coordination, implementation
- ❑ **Check** - monitoring, indicators, comparison analysis, best practices show cases
- ❑ **Act** - activities monitoring, changing the plans, improvements

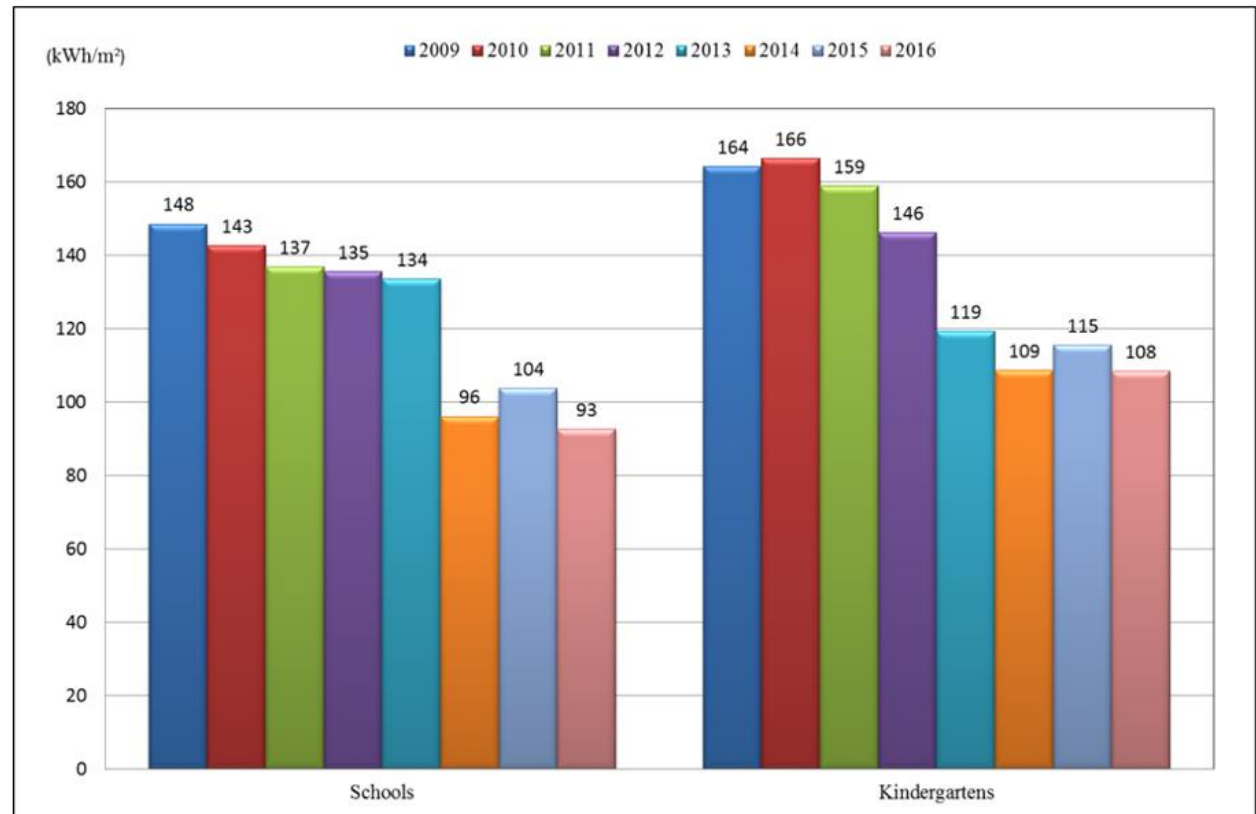


MUNICIPALITY ORGANISATIONAL STRUCTURE



Public buildings in MUNICIPALITY OF MARIBOR

- 36 kindergartens
- 22 primary schools
- 4 schools and 5 kindergartens refurbished



FINANCING

City administration and City Council

**INVESTMENTS
MEASURES**



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Kindergarten LUPINICA MARIBOR

New low energy building, 1,8 mio EUR investment from ERDF, 1000 m²

BEFORE:

- 220 kWh/m²

AFTER :

- Expectations 30 kWh/m², real 75 kWh/m²
- heat pumps, air conditioning system
- LPG back up system
- LED lighting
- walls (60 cm +30 cm insulation)

ENERGETSKA IZKAZNICA STAVBE

Podatki o stavbi

Št. izkaznice: 2017-24-61-46256 Velja do: 09.02.2027

Identifikacijska oznaka stavbe, posameznega dela ali delov stavbe: katastrska občina 680 številka stavbe 5249

Klasifikacija stavbe: 1263001

Leto izgradnje: 2012

Naslov stavbe: Ulica Hinka Nučiča 11, 2000 Maribor

Kondicionirana površina stavbe A_x (m²): 1.037

Parcelna št.: 1888/1

Katastrska občina: TEZNO

Vrsta izkaznice: merjena

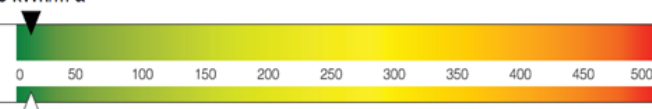
Vrsta stavbe: nestanovanjska

Naziv stavbe: Vrtec Tezno Lupinica



Dovedena energija

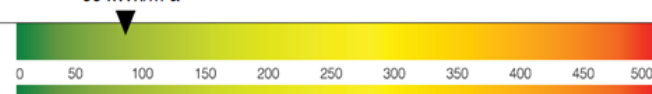
15 kWh/m²a



POVPREČNA RABA ENERGIJE PRIMERLJIVE STAVBE (15 kWh/m²a)

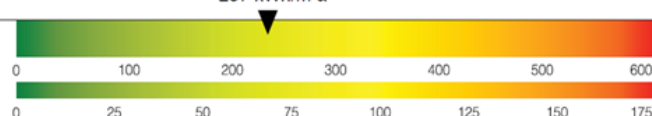
Dovedena električna energija

88 kWh/m²a



Primarna energija in Emisije CO₂

237 kWh/m²a



50 kg/m²a

PERFORMANCE MONITORING AND VERIFICATION SYSTEM

- Essential for effective implementation of energy efficient measures and achievement of the imposed targets.
- Involvement of specialized institutions is needed (energy agencies).
- Develop a bottom up approach
- Have to have good, verified, traceable databases.
- It should be a Part of the energy efficient action plans.

EMPOWER PROJECT – co-financed from program INTERREG EUROPE, 2,3 mio EUR

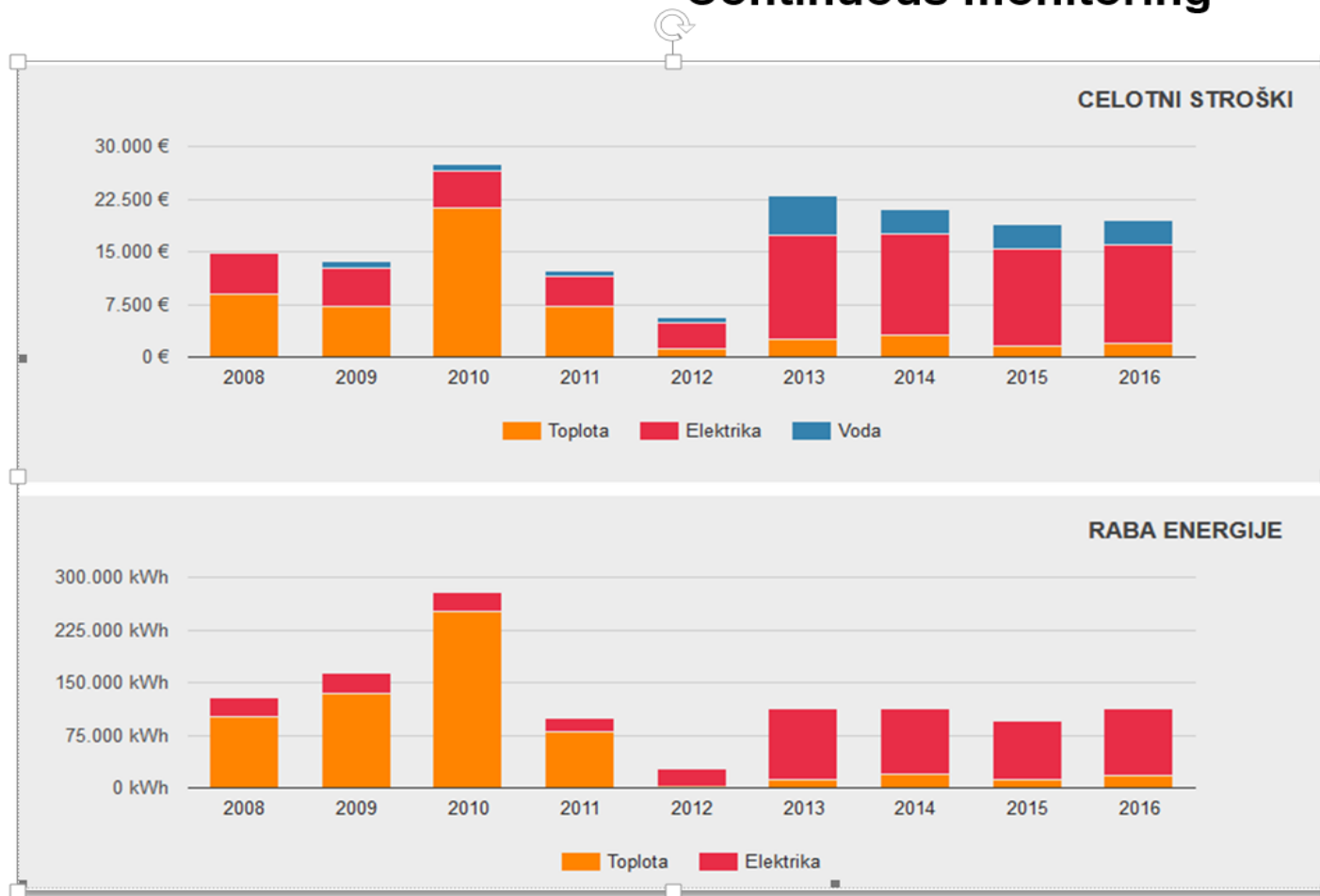
<http://www.interregeurope.eu/empower/>

EMPOWER (More carbon reduction by dynamically monitoring energy efficiency) works on the exchange of good practices on dynamically monitoring energy efficiency in buildings, with special focus on the use of innovative financial instruments, in order to achieve more carbon reduction and to improve low-carbon economy policies.

Continuous approach: PLAN → DO → CHECK
AKT

Kindergarten LUPINICA MARIBOR

Continuous monitoring



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USERS INVOLVEMENT AND COMMUNICATIONS

DIRECTORS,
HEADMASTERS

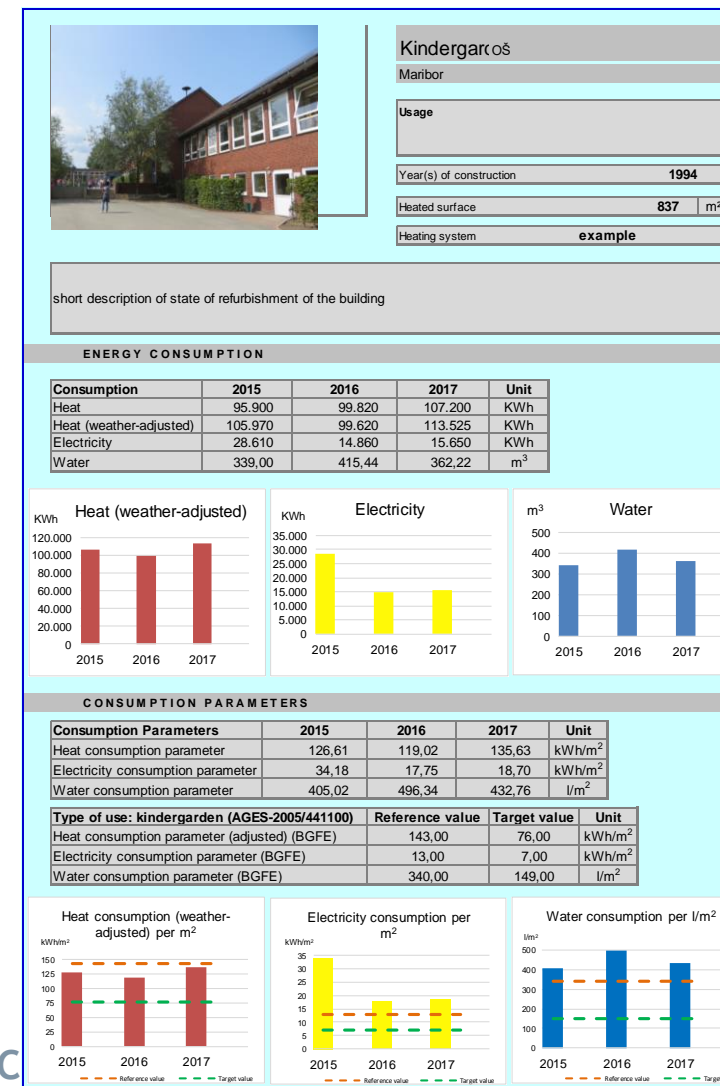
TEACHERS

PUPILS

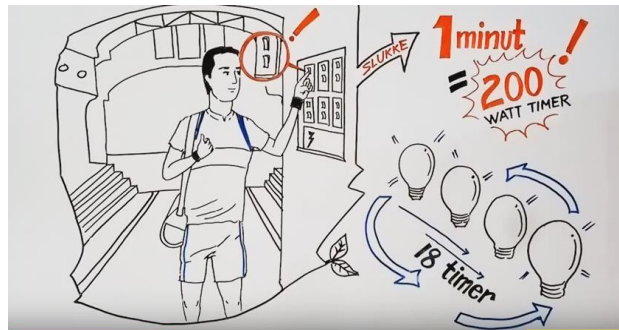
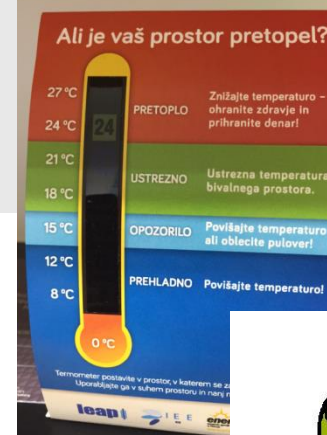
TECHNICAL
STAFF

PARENTS,
VISITORS

- ❑ Good and verified data
- ❑ Different approaches
- ❑ Learning by doing
- ❑ Meetings, discussions
- ❑ Informational and educational materials



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RESULTS

- ❑ Good and trustable relations with consumers
- ❑ Continuous information and educational activities
- ❑ Everyone is responsible
- ❑ Continuous lowering the energy use and CO₂ emissions
- ❑ Better working and living conditions
- ❑ Good data base for future planning
- ❑ Potential for new financial mechanisms like energy contracting

Energija	v kWh	prihranek po sanaciji v %
Povprečna letna raba 2008-2011	458.573	-
Raba 2012	295.897	-
Raba 2013	302.072	-
Raba 2014	173.185	-
Raba 2015	226.954	-
Raba 2016	237.044	-
PRIHRANEK 2012	162.676	35
PRIHRANEK 2013	156.501	34
PRIHRANEK 2014	285.388	62
PRIHRANEK 2015	231.619	51
PRIHRANEK 2016	221.529	48



CONCLUSIONS

- ❑ Good and trustable relations with consumers
- ❑ Continuous information and educational activities
- ❑ Good and verified data
- ❑ Different approaches
- ❑ Learning by doing
- ❑ Meetings, discussions, reporting on the achievements
- ❑ Motivation - basis in Energy law



TAKING COOP

THANK YOU!

