

The European Union's programme for India

Clean Energy Cooperation with India (CECI): Legal and policy support to the development and implementation of energy efficiency legislation for the building sector in India (TA-ECBC)

Webinar

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Energy Management Information System & Energy Certificates Information System M.S. Iva Fakin



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Content of the presentation

Key topics

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 - What is it?
 - Main screen
 - User interface
 - mISGE
 - Analytic possibilities
 - Integration with other systems
- ❑ Energy Certificates Information System (IEC)
 - What is it?
 - Purpose
 - Main screen
 - Entry of data on energy audit
 - Energy certificate form
- ❑ Summary

EMIS - What is it?

- Main Croatia's national tool for continuous gathering, monitoring, analysis, and reporting of energy and water consumption data in public sector buildings.
- Its use is mandatory for the entire public sector by the Energy Efficiency Act.
- Every institution in Croatia must have an Energy manager for sustainable energy management.



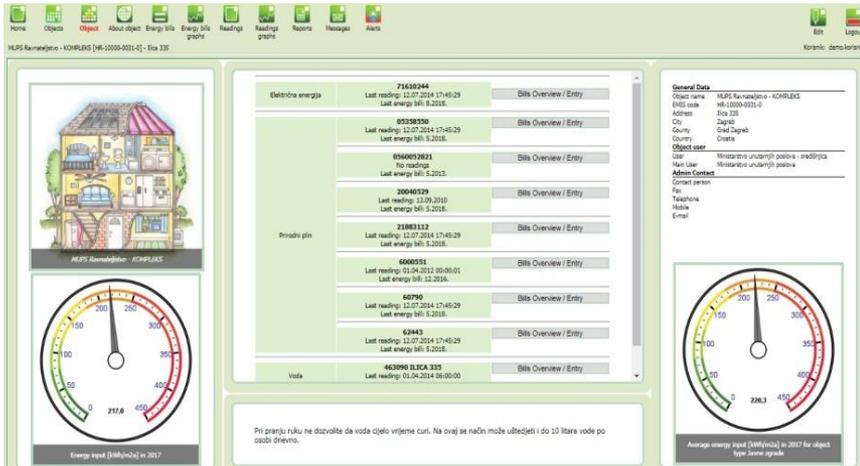
Main screen

EMIS database statistics (25.09.2018.)						
ECC type	Number of objects	Number of metering points	Number of automatic metering points	Energy bill count	Number of readings	Number of automatic readings
Complex	1.033	3.356	359	352.738	9.178.056	8.916.531
Building in complex	4.311	3.610	326	350.814	5.419.115	5.111.677
Free-standing building	9.950	24.261	317	2.667.001	9.491.453	7.513.695
Part	3.580	6.509	35	622.823	1.113.870	955.881
Sum - Buildings	18.874	37.736	1.037	3.993.376	25.202.494	22.497.784
Public lighting	21.581	20.714	2	1.752.251	0	0
Sum	40.455	58.450	1.039	5.745.627	25.202.494	22.497.784

Active EMIS users	
Role	Number
Gost	44
Korisnik	1221
Energetski menadžer	18
Energetski administrator	188
Administrator sustava	9
All Users	1480

www.isge.hr

User interface



Object screen



Energy bill input

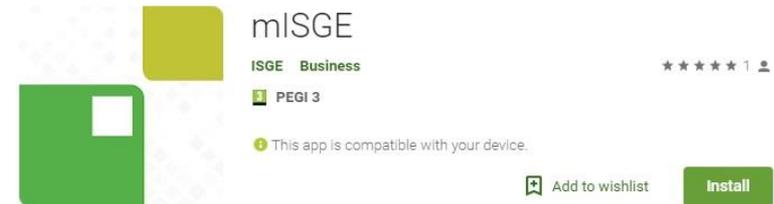
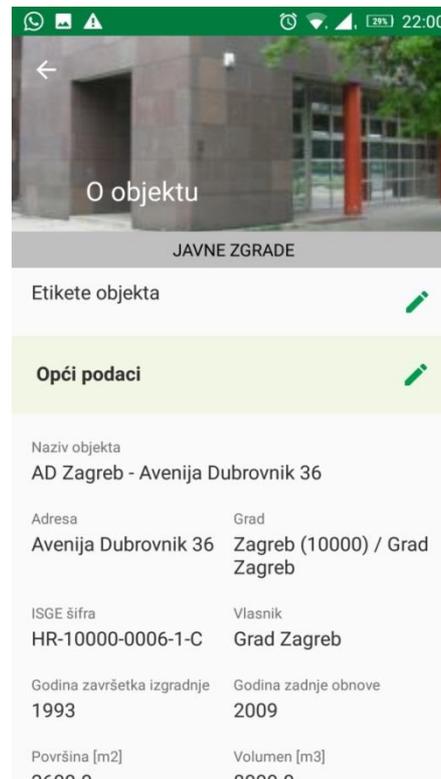


Entered bills on a meter



Bills charts

mISGE - mobile application for users



<https://play.google.com/store/apps/details?id=com.apn.isge>

Analytic possibilities – Administrator interface

HOME USERS OBJECTS GRAPHS AND REPORTS GEO ADMINISTRATION ENERGY ADMINISTRATION SYSTEM

Objects Ministarstvo graditeljstva i prostornoga uređenja [HR-10000-0446-1] - Ulica Republike Austrije 20, Zagreb

All entries One entry Users Google Maps Metering points Bills Energy bills graphs Readings Readings graphs Sensors Indicators Targets Reports

About object

General Data Energy systems data Construction data Documents Classification Energy audit/certificate Energy reconstruction Object users

Energy systems data

Heating system Cooling system Air-conditioning and ventilation Water/DHW Lighting system Other systems

Update Cancel

Building heating system

Total installed capacity of thermal station / substation [kW] 455

Heating efficiency indicator 1,14266198

Total installed capacity of electric motors to drive the pumps in the heating system [kW]

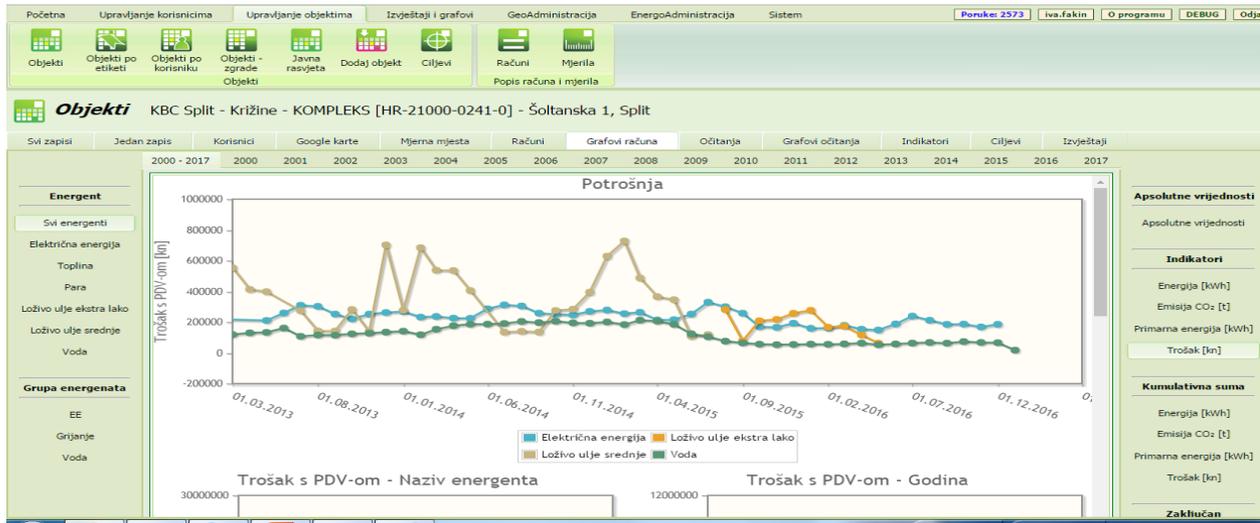
Heating pump

The total number of radiators 189

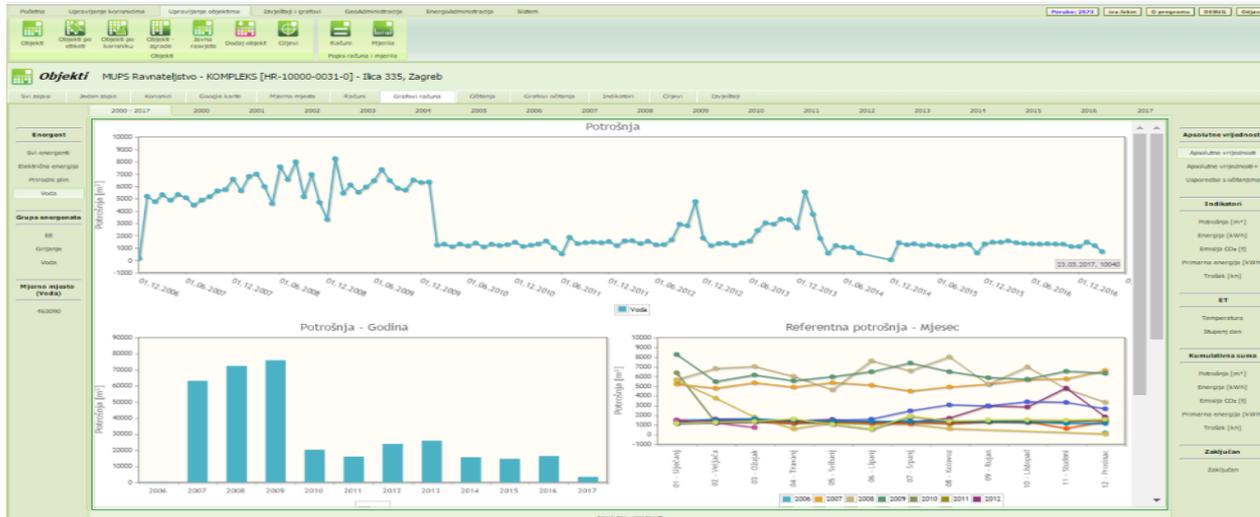
The total installed capacity of radiators [kW] 398,193

Heating fuel / Ge	Type of boiler/he	Heating system n	Year of manufact	Last service date	Total heating cap	Comment / Heating system
Para - voda	TKT TOPLOTA	Centralno - vlastita	1.995		398	
Para - voda	PIREKO PU-6-NIRO	Centralno - vlastita	2.000		57	

Analytic possibilities



ESCO model of refurbishment, Clinical hospital



Detection of water leakage

Integration with other systems

- ❑ Integrated with
 - Smart metering systems: automatic meter readings (hourly)
 - Vendor billing systems: automatic bills (monthly)
 - Meteorological systems: temperature, heating degree-days
- ❑ Integration in process
 - Integration with national energy certificates database www.eenergetskicertifikat.mgipu.hr
 - Integration with cultural heritage database



EMIS in the world

- Currently used in Croatia, Bosnia and Herzegovina, Serbia, Malaysia, Montenegro, Russia and Turkey.
- Presented to be installed in Albania, Romania and Ukraina.
- **Ask us - we love to share it and talk about it!** We also have a mockup version so you can play with it. 😊

IEC - What is it?

- The IEC information system for the development of energy certificates is a database serving as a single register for the issuance, storage and quality control of energy certificates
- In the Republic of Croatia issuance of energy certificates is only possible via the IEC information system



IEC

eEnergetskiCertifikat

Građani

1. Izvadak - Certifikatori (fizičke osobe)
2. Izvadak - Certifikatori (pravne osobe)
3. Izvadak - Kontrolori
4. Izvadak - Nositelji programa izobrazbe

Registrirani korisnici

Prijavite se u sustav koristeći Nacionalni identifikacijski i autentifikacijski sustav (NIAS)

[Prijava putem NIAS-a](#)

Purpose of IEC

- Issuance and storage of energy certificates of buildings
- Database of persons authorised for performing energy audits and energy certification of buildings
- Storage of reports on performed energy audits of buildings

- Business processes within the IEC
 - Training program for energy certification – establishment of a database on the attendants of training programmes
 - Issuance of authorisations – establishment of the Register of persons authorised for energy certification, and for control.
 - Performing energy audits and energy certification of buildings
 - Performing regular inspections of heating and cooling systems
 - Control of energy certificates

Main screen

- Consists of the toolbar, menu and control panel

The screenshot shows the top navigation area of the IEC system. On the left is the IEC logo. The main toolbar contains icons for: Početak (Home), Edukatori (Educators), Edukacije (Education), Certifikatori (Certifiers), Zgrade (Buildings), Redoviti p... (Regular p...), Certifikati (Certificates), Kontrolori (Controllers), Kontrole (Controls), Priručnik (Manual), and e-Learning. On the right, there are icons for Administrator and Poruke (Messages). Below the toolbar is a menu bar with options: IEC, Administracija (Administration), and Izveštaj (Report).

Radna ploča

Energetski pregledi/certifikati

Rbr. certifi...	Oznaka certifikata	Certifikator	Vrsta zgrade	A	N	Ž	Energ...	Datum...	Rok v...	Svrha izvođenja	Složenost sust...	S	Važeći/Nevažeći	Status	
146473	F_876_2014_10033_SZ2	Augustin Jelušić	Višestambene zgrade	...	...	...	E	14.11.2017.	14.11.2027.	Prodaja	Jednostavni	Ne	Važeći	Izdan	
146472		CONVEXO d.o.o.	Uredske zgrade	...	...	...				Izlaganje	Jednostavni	Ne		U pripremi	
146471		CONVEXO d.o.o.	Uredske zgrade	...	...	...				Izlaganje	Jednostavni	Ne		U pripremi	
146470		CONVEXO d.o.o.	Uredske zgrade	...	...	...				Izlaganje	Jednostavni	Ne		U pripremi	
146469	P_142_2011_10013_SZ2	ALFA-INŽENJERING d.o.o.	Višestambene zgrade	...	...	I...	C	14.11.2017.	14.11.2027.	Prodaja	Jednostavni	Ne	Važeći	Izdan	
146468	F_743_2014_10004_SZ1	Šime Dukić	Obiteljske kuće	/	...	...	C	14.11.2017.	14.11.2027.	Nova	Jednostavni	Ne	Važeći	Izdan	
146467		ENERGETSKI CERTIFIKA...	Višestambene zgrade	...	...	...	C			Prodaja	Jednostavni	Ne		U pripremi	
146466	P_542_2014_10001_NSZ7	OBSTINATIO d.o.o.	Zgrade trgovine - veleprod...	...	...	...	B	14.11.2017.	14.11.2027.	Iznajmijivanje	Jednostavni	Ne	Važeći	Izdan	
146465	P_195_2012_10007_SZ2	GABIT d.o.o.	Višestambene zgrade	...	...	...	C	14.11.2017.	14.11.2027.	Prodaja	Jednostavni	Ne	Važeći	Izdan	
146464	P_1071_2017_10014_SZ2	PROJEKтни BIRO AK d.o.o.	Višestambene zgrade	...	...	...	D	14.11.2017.	14.11.2027.	Iznajmijivanje	Jednostavni	Ne	Važeći	Izdan	
146463	F_381_2013_10015_SZ1	Marijan Cindrić	Obiteljske kuće	...	...	...	C	14.11.2017.	14.11.2027.	Prodaja	Jednostavni	Ne	Važeći	Izdan	
146462	P_1053_2017_10026_SZ2	11 A PROJEKT d.o.o.	Višestambene zgrade	...	...	...	D	14.11.2017.	14.11.2027.	Prodaja	Jednostavni	Ne	Važeći	Izdan	
146461		ČURIN NAUTIKA j.d.o.o.	Višestambene zgrade	...	...	I...				Nova	Složeni	Ne		U pripremi	
146460	F_1151_2015_10004_SZ2	Drago Kovač	Višestambene zgrade	...	...	...	B	14.11.2017.	14.11.2027.	Nova	Jednostavni	Ne	Važeći	Izdan	
146459	P_492_2014_10003_SZ1	PROJEKтни URED DEBE...	Obiteljske kuće	...	...	...	F	14.11.2017.	14.11.2027.	Iznajmijivanje	Jednostavni	Ne	Važeći	Izdan	

Entry of data on energy audit

Administracija Izvještaj

Energetski pregled/certifikat

Oznaka energetskog certifikata

F_876_2014_10033_SZ2

Vrsta zgrade

Višestambene zgrade

Naziv

Stambena zgrada u ulici Franje Kuhača 23, 31000 Osijek

Naziv samostalne uporabne cjeline

Stan u zgradi; Šifra prostora: 57167434

Adresa

Franje Kuhača 23

Mjesto

Osijek

Poštanski broj

31000

Županija

Osječko-baranjska

Katastarska čestica

5805

Katastarska općina

Osijek

Podaci o zgradi/Energetski razred

Građevinski dijelovi

Termotehnički sustavi

Proračunski parametri

Energetske potrebe

Podaci o certifikatu

Dokumenti

Kontrole

Migrirani podaci

Vlasnici zgrade

Ministarstvo obrane Republike Hrvatske

Projektant energetskog djela zgrade *

-

Izvođač radova *

-

Godina završetka izgradnje *

1750

Godina zadnje rekonstrukcije *

1950

Ime fizičke osobe projektanta glavnog projekta građevine

-

Naziv pravne osobe projektanta glavnog projekta građevine

-

Naručilac certifikata *

Ministarstvo obrane Republike Hrvatske

Ulica i kućni broj naručitelja certifikata *

Trg kralja Petra Krešimira IV 1

Mjesto naručitelja certifikata *

10000 Zagreb

Summary

□ Energy performance of buildings directive (EPBD) implemented into Croatian legislation

- Energy Efficiency Act(NG 127/14)
 - Regulation of Sustainable Energy Management in the Public Sector (NG18/15)
- Building Act (NG 153/13, 20/17)
 - Regulation of energy audits and energy certification of buildings (NG 88/17)
- Established base for continuous and systematic energy management in Croatia.
- Established procedure for uniform energy certificates with associated database.
- Annual average savings of **6,81%** of overall consumption in public sector buildings only through use of EMIS.
- Saved **1059,55TJ**, **294.319.074kWh**, **100.475tCO₂** and **~51.963.023€** in three year period.

Total savings: ~17.321.000 €/year



Thank you for your attention!

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Project official website

<http://ace-e2.eu/>

