

TAKING
COOPERATION
FORWARD

TARGET-CE - Train the Trainers

Fabio Remondino - FBK, Trento (Italy)
Anna Nowacka - EUWT NOVUM, Jelenia Góra (Poland)
Hana Kolenc - KSSENA, Velenje (Slovenia)

TRAIN-THE-TRAINERS agenda

<p>9:45-10:30</p>	<p>Module #1 - TARGET-CE energy efficiency tools</p> <ul style="list-style-type: none"> • OnePlace web-platform & 3D EMS tool (BOOSTEE-CE) • Energy Ghost simulation game (Energy@School) • Living Energy Performance managing tool & database (eCentral) • Energy Dashboard (CitiEnGov Toolkit) • Stickers for behavioral change (GreenSoul) 	<p>Fabio Remondino (FBK) Anna Nowacka (EUWT) Hana Kolenc (KSSENA)</p>
<p>10:30-10:45</p>	<p>Coffee break</p>	
<p>10:45-11:45</p>	<p>Module #2 - Regulations, legislations and financial sources of EE solutions</p> <ul style="list-style-type: none"> • Renovation wave, with excursus on linked topics: EU Green Deal, EPDB regulation, NZEB concept, New EU Bauhaus • Innovative support methods to implement and finance the renovation wave 	<p>Marco Costa (AESS Modena - external expert supporting UCBR)</p>
<p>11:45-12:45</p>	<p>Module #3 - Interactive session on "Energy Performance Contracts"</p> <ul style="list-style-type: none"> • Group work on Energy Performance Contracts (EPC) models: brainstorming and feedback (own experience, local enabling factors and barriers, relevant stakeholders) 	<p>Marco Costa (AESS Modena - external expert supporting UCBR)</p>
<p>12:45</p>	<p>Wrap-up, questionnaire and conclusions</p>	



TARGET-CE project



- ❑ **TARGET-CE** collects and adjusts (“**capitalize**”) ICT tools, financial models, action plans and training material related to **Energy Efficiency** and deploy everything to local and regional administrations integrating them into territorial and thematic strategies
- ❑ **TARGET-CE** aims to become an energy efficiency (EE) flagship, offering & showcasing solutions for **Energy Efficiency** in public buildings within a unique web platform, the **BOOSTEE-CE OnePlace** (<http://oneplace.fbk.eu>)



The Online Energy Platform

OnePlace

TARGET-CE project



<https://www.youtube.com/watch?v=jOl21eNKxzs>



➔ website



<https://www.interreg-central.eu/Content.Node/TARGET-CE.html>

➔ facebook



<https://www.facebook.com/TARGETCE2022>

➔ twitter



<https://twitter.com/CeTarget>

THEMATIC MODULE #1

The Online Energy Platform

OnePlace

<https://oneplace.fbk.eu/>



The Online Energy Platform

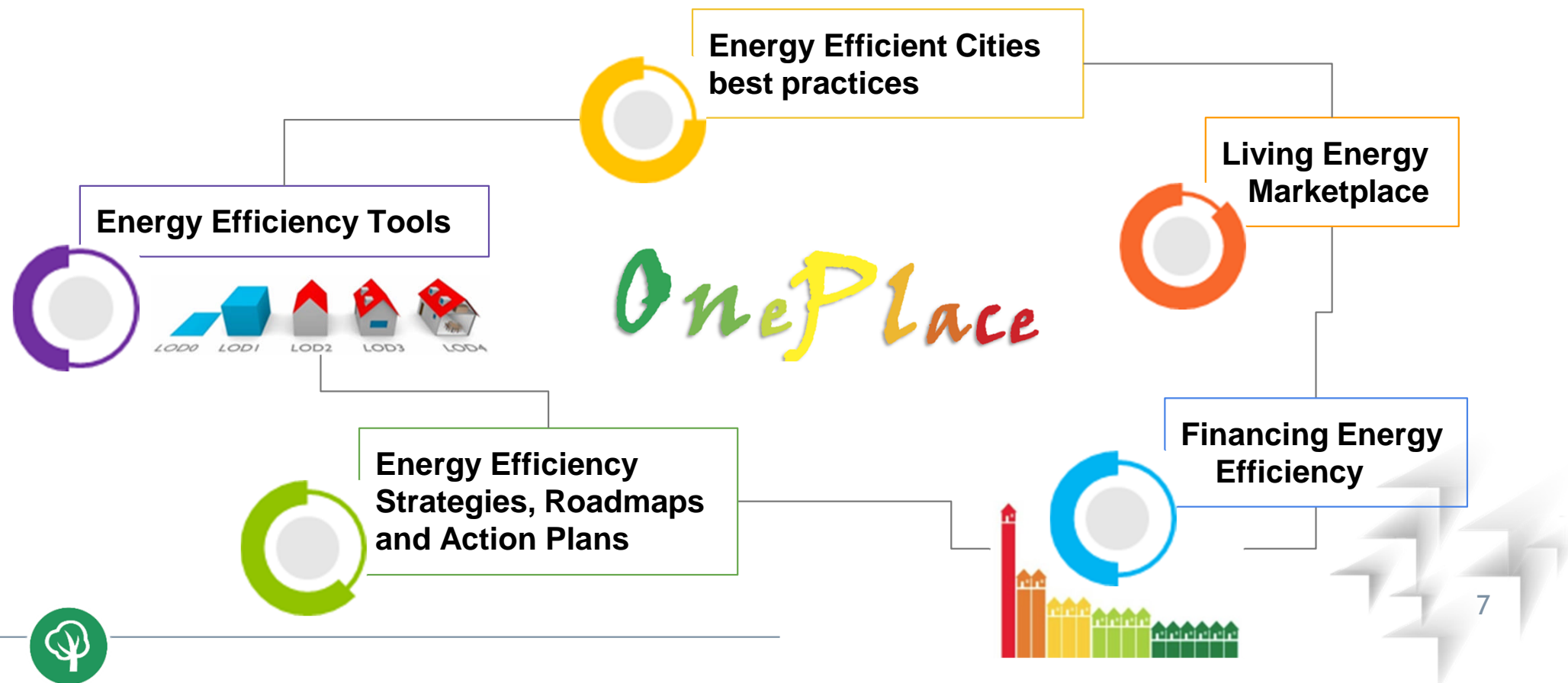
Contents of module #1

1. OnePlace web-platform & 3D EMS tool (BOOSTEE-CE)
2. Energy Ghost simulation game (Energy@School)
3. Living Energy Performance Certificate managing tool & database (eCentral)
4. Energy Dashboard (CitiEnGov Toolkit)
5. Stickers for behavioral change (GreenSoul)



The Online Energy Platform - OnePlace

Web platform includes 5 interlinked modules enriched with **energy related contents** (best practices, database of devices, energy certificates, finances, strategies, etc.) **freely accessible** to policy makers, energy planners and citizens in order to improve the governance and understanding of energy efficiency.



The Online Energy Platform - OnePlace

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Marketplace

EE Cities

EE Strategies

EE Finances

EE Tools



BOOSTEE-CE



PANEL 2050



EMPOWER



ENERGY@SCHOOL



ECENTRAL



FEEDSCHOOLS



CITIENGOV



GREENSOUL



The Online Energy Platform - OnePlace

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EE Cities

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EE Tools

Living Energy Marketplace

Living Energy Marketplace aims to connect customers interested in energy efficiency projects to qualified contractors (architects, engineers, auditors, craftsmen, technicians and installers, energy agencies etc.) in order to scale up investments in energy efficiency and to reduce information barriers. It also contains links and information covering the electronic & electric appliances to empower potential investors to make energy-wise decisions.



Device database

Here you can find links to databases covering all products that you are considering buying this kind of products.

[View more](#)



Experts Database

Contains database of links to experts in the field of architecture and engineering, acting as a connection point between customers interested in energy efficiency projects and qualified contractors.

[View more](#)

Living Energy Marketplace aims to **connect customers** interested in energy efficiency projects **to qualified contractors** (architects, engineers, auditors, craftsmen, technicians and installers, energy agencies etc.) in order **to scale up investments in energy efficiency** and to reduce information barriers.

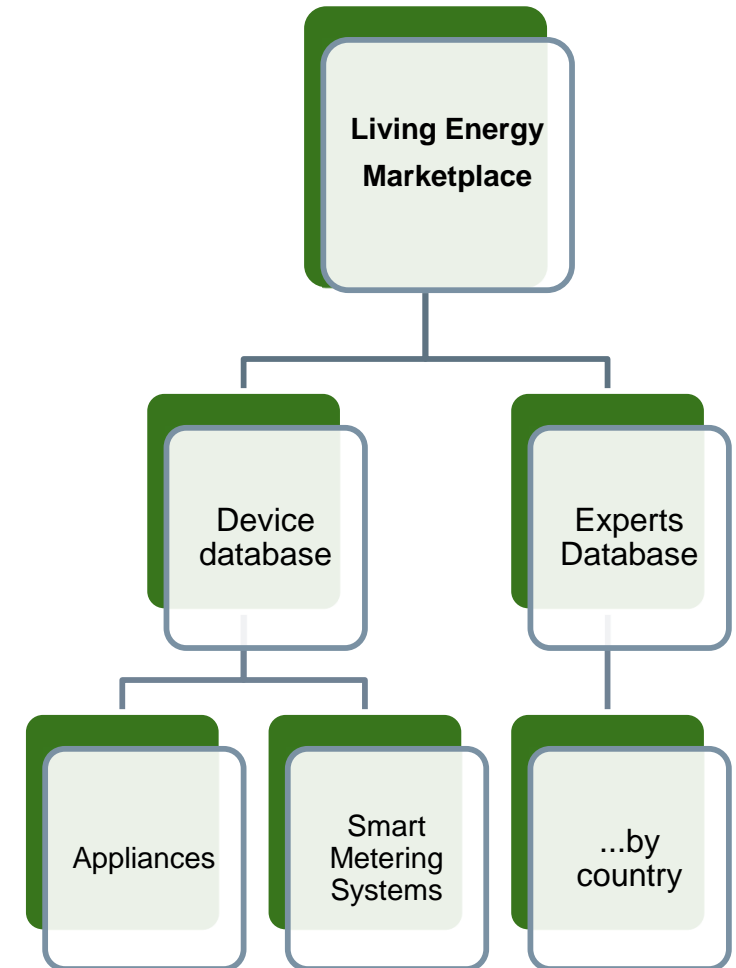


The Online Energy Platform - OnePlace

Capitalized Projects **Marketplace** EE Cities EE Strategies EE Finances EE Tools

It contains:

- links and information covering the **electronic & electric appliances** to empower potential investors to make energy-wise decisions.
- and **database of links to experts** in the field of architecture, engineering, energy efficiency, renewable energy sources etc. This database is meant to serve as **a connection point between customers** interested in energy efficiency projects and qualified contractors.



It is basically a **database of devices and experts** to empower potential investors to make energy wise decisions.

The Online Energy Platform - OnePlace

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Energy Efficient Cities best practices

Search

Search..



Smart metering system in kindergarten Loptica

Koprivnica, Koprivnicko - krizevacka County, Croatia

The whole process of SM system implementation in kindergarten possibilities of available SM systems. In April, tech guys... [Read](#)



Smart metering system in public building "Music Scholl Fran Korun Koželjski Velenje"

Velenje, Savinjsko-Saleška region, Slovenia

Within the pilot action, Municipality Velenje with help of selected external experts, installed the smart meters in the Music Scholl Fran Korun Koželjski Velenje framework and the financial aid of project BOOSTEE-CE, which... [Read More](#)



Low energy reconstruction and repurpose of building

Koprivnica, Koprivnicko, Croatia

The subject of this project was the reconstruction and repurpose of building and management studies in media. Former military... [Read](#)



Energy Management System for Piastów Community

Piastów, Mazovian, Poland

Before the implementation of the investment, a stocktaking was carried out. Stocktaking included energy consumption points, the power, phase voltages, power frequency) with a frequency of 33 kHz, thermal parameters (supply and return temperature)... [Read](#)

The **Energy Efficient Cities** module is an **exchange platform of experiences** and identification of **good practices** within energy efficiency sector for public authorities and other public users.

It demonstrates the range of **approaches and measures** various cities have used **to undertake efficiency improvements** and thus helps to guide cities in designing effective urban energy efficiency policies and programs.

The Online Energy Platform - OnePlace

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It contains:

- **55 Best Practices** from **11 countries** (constantly updated) covering energy efficiency of buildings and smart metering.
- Each best practice **contains basic information, system characteristics, financial sources and financing details and project implementation benefits.**



The Online Energy Platform - OnePlace

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Energy Efficiency Strategies, Roadmaps and Action Plans

Interreg
CENTRAL EUROPE
ENERGY@SCHOOL

European Union
European Regional
Development Fund

EE strategies in schools (Energy@School)
[View more](#)



Roadmaps for Energy Future 2050 (Panel 2050)
[View more](#)

ENERGY GUARDIANS SMART-SCHOOL MANAGEMENT PLAN

Energy-related behaviour in public buildings

This survey will focus on energy-behaviour of public building users (employees & visitors). It is known that individual energy-consumption behaviour patterns in public buildings are different from individual behaviour patterns in residential buildings.

**HELPING CITIES IN CEE REGION
ON THEIR WAY TO CREATE
AND IMPLEMENT SECAPS**



Questionnaire example to change users' behaviour and achieve higher EE (GreeSoul)
[View more](#)

D.T2.2.1 Downstreaming eCentral tools and schemes for better management and renovation of public buildings

Interreg
CENTRAL EUROPE
eCentral

European Union
European Regional
Development Fund

How to turn a public building into a NZEB (eCentral)
[View more](#)

The **EE Strategies** module collects past strategies, roadmaps and action plans developed in the past years by various European projects.

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Financing Energy Efficiency



Home Capitalized Projects Marketplace EE Cities EE Strategies EE Finances



Analysis of innovative financing schemes for deep renovation of public buildings (eCentral project)

[View more](#)



Transnational methodological framework

[View more](#)



Comparative analysis

[View more](#)



EE financing roadmaps for public infrastructures

[View more](#)



Best practices and investments return models

[View more](#)

The **Financing Energy Efficiency** module is the visual presentation of the transnational strategy outcomes, financial roadmaps, examples of the best practices and practical steps how to use the national & EU-level resources.

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Financing Energy Efficiency module consists of:

- **Analysis of innovative financing schemes** for deep renovation of public buildings (eCentral project)
- **Comparative analysis of financial schema** in CE countries
- Transnational Energy Efficiency **Financing Strategy**
- Transnational methodological framework for a **EE roadmap development**
- Energy efficiency **financing roadmaps for public infrastructures** in CE municipalities
- **Best practices and investments return models** in energy efficiency financing
- Energy Efficiency **Financing Project Calculator**



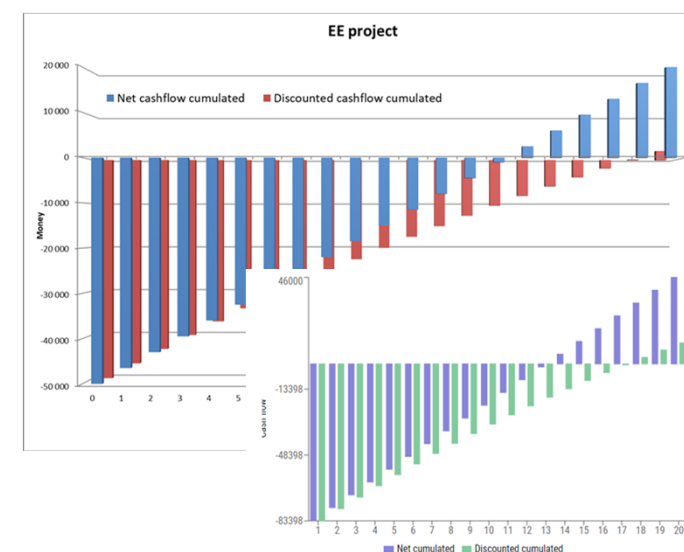
Capitalized Projects Marketplace EE Cities EE Strategies **EE Finances** EE Tools

Financing Energy Efficiency

- ❑ The simple EE project calculator which gives to the user a basic indicative idea of the profitability and advisability of the investment into an energy efficiency or RES project.
- ❑ It counts **just with own sources**, not considering **subsidies or loans** which both can change foreseen values significantly (If subsidies are involved, the NPV and IRR are increasing and payback periods are shortening, while loans affect the investment in the opposite way)
- ❑ Terms and definition of **basic financial indicators** included (NPV, IRR, Discount rate, payback period)
- ❑ Involves **graphical illustration of cash flow** and discounted cash flow.

Important note – the calculator is just an indicative tool, for concrete investment calculations it is highly advisable to carry out a proper financial analysis by a financial expert!

Energy Efficiency Financing Project Calculator



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Energy Efficiency Tools



3DEMS

The 3D energy management tool (3DEMS) serves as seedbed for ir building models for energy-related needs.

[View more](#)

BOOSTEE-CE



Energy Ghost simulation game

Energy@school app developed as an educational tool to train stude

[View more](#)

ENERGY@SCHOOL



The Living EPC Tool

The Living EPC Tool is a complex interactive web-based applicatic public authorities to identify investment opportunities, by

[View more](#)

eCentral



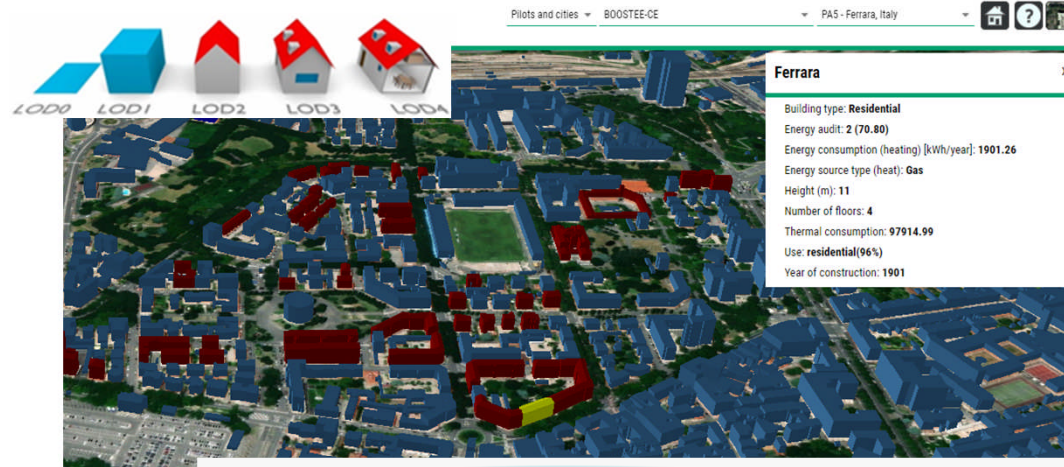
Energy Dashboard

[View more](#)

CitiEnGov



EE Stickers



Main page Discussion

Main Page

Welcome to the CitiEnGov Toolkit

The CitiEnGov Toolkit has a focus composed of two parts:

- the first part contains information about energy data in different regions of Central Europe (regions of project partners), and
- the second part describes a **role of energy topic within Public Authorities**

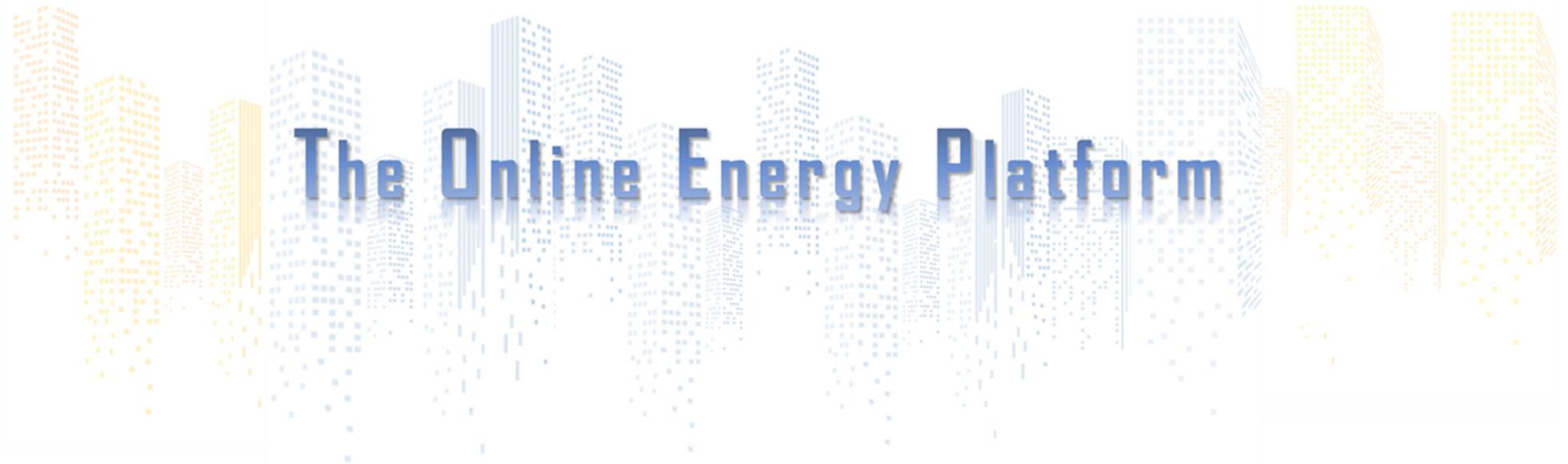
The topics of the Toolkit are the three main sectors that CitiEnGov project is dealing with:

- **Buildings**

Buildings
Mobility
Public lighting

National sections
Österreich
Hrvatska
Deutschland
Magyarország

The Online Energy Platform - OnePlace



1. OnePlace web-platform & **3D EMS tool (BOOSTEE-CE)**
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The Online Energy Platform - OnePlace - the 3D EMS tool -

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EE Cities

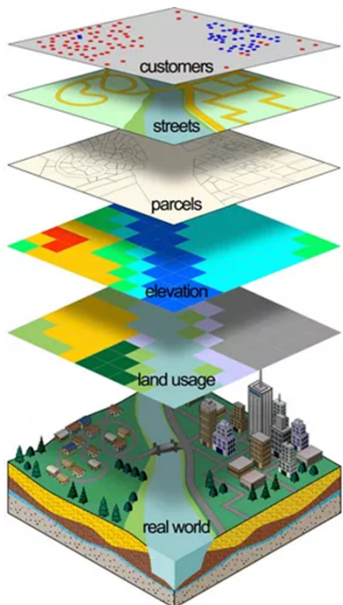
EE Strategies

EE Finances

EE Tools

3D Energy Management System; 3D EMS tool (<https://oneplace.fbk.eu/3d/>)

DATA +
GIS +
3D CITY
MODELS



Spatial and non-spatial energy-related **data** integrated with **3D city models into GIS environments** have been already adopted in some cities, but we are very **far away from their widespread** utilization and daily use.

Although **on-going initiatives** have demonstrated the potential of geospatial data, 3D city models and webGIS for better planning and management of energy efficient buildings, there is still a **gap between a “nice to have” attitude and a “need to have” one.**

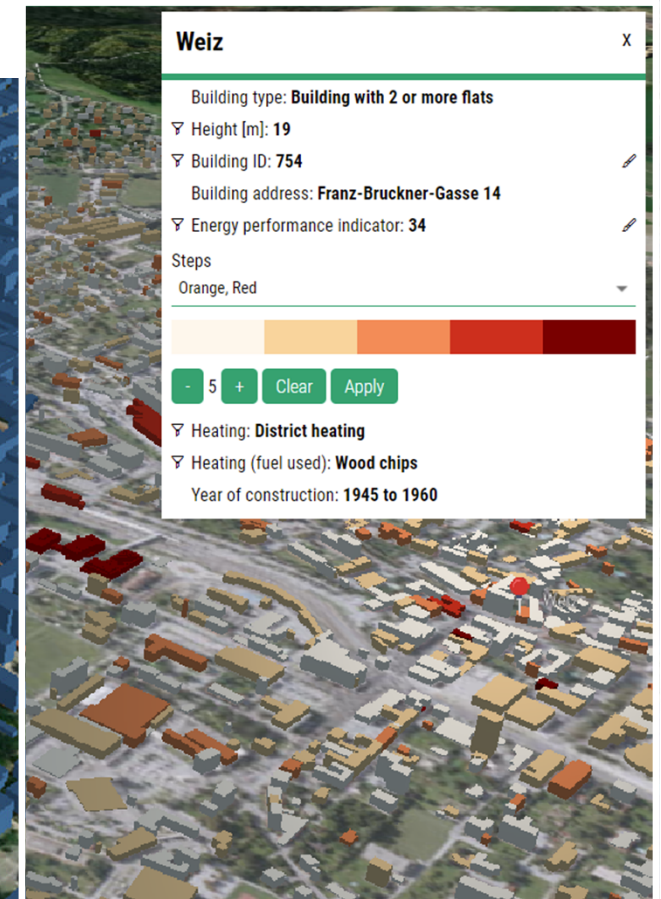
A more extensive and powerful use of **GEOSPATIAL DATA** and ICT tools **FOR ENERGY EFFICIENCY** can support the creation of **SMART** and **LOW-CARBON CITIES**

The Online Energy Platform - OnePlace - the 3D EMS tool -

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3D Energy Management System; 3D EMS tool (<https://oneplace.fbk.eu/3d/>)

3D Energy Management System is a module (**WebGIS tool**) to visualize, query and manage energy information / uses / loses / audit certificates of (public) buildings using 3D building models.



The Online Energy Platform - OnePlace - the 3D EMS tool -



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3D Energy Management System; 3D EMS tool (<https://oneplace.fbk.eu/3d/>)

Place
Energy Platform

Pilots and cities ▾ BOOSTEE-CE

▾ TARGET-CE



**Unione dei Comuni della Bassa Romagna
Offices - Carmine building - Lugo**

Building type: **Government**
Electricity consumption (kWh/year): 60420
Energy audit: **Yes**
Energy consumption (heating) (GJ/year): 1493.79
Energy source type (heat): **Natural gas**
Estimation of the amount of heating losses in the building (kWh/m2/year): 127.55
Total CO2 emissions (kg/m2 year): 46.14
Year of construction: 1520 (last restoration in 1997)

Weiz

Building type: **Building with 2 or more flats**
Height [m]: 19
Building ID: 754
Building address: **Franz-Bruckner-Gasse 14**
Energy performance indicator: 34

Steps
Orange, Red

- 5 + Clear Apply

Heating: **District heating**
Heating (fuel used): **Wood chips**
Year of construction: 1945 to 1960

The Online Energy Platform - OnePlace - the 3D EMS tool -

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3D Energy Management System; 3D EMS tool (<https://oneplace.fbk.eu/3d/>)

In the **pilot areas**, for selected public buildings, **geospatial databases** with urban and energy data were created in order to **combine them with 3D building geometries** within the **3DEMS tool**.



The Online Energy Platform - OnePlace - the 3D EMS tool -

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EE Cities

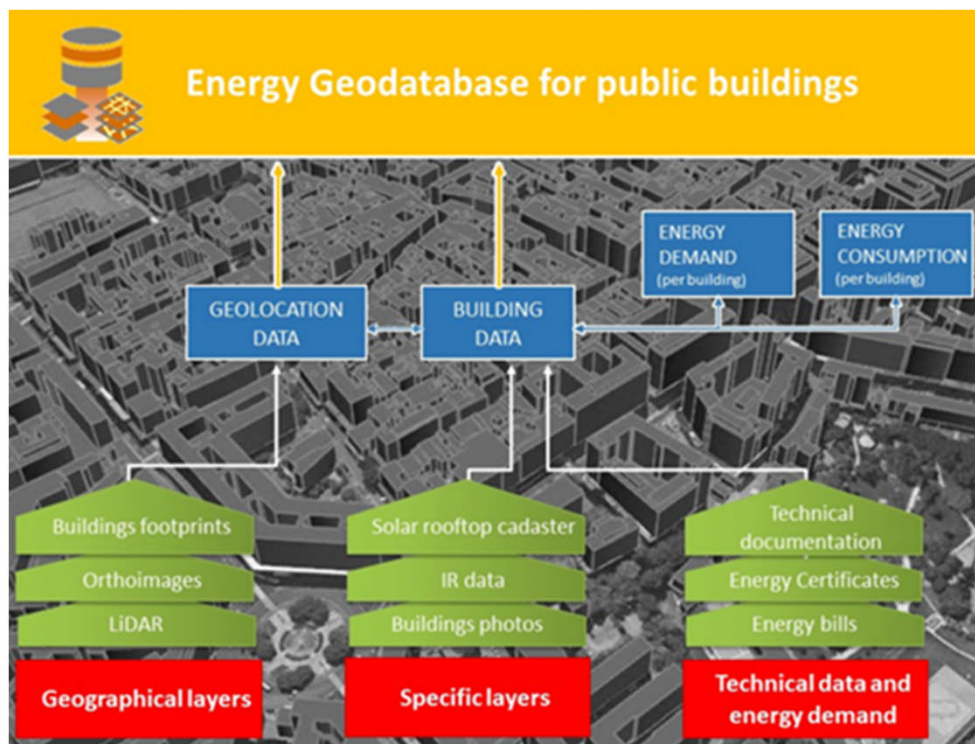
EE Strategies

EE Finances

EE Tools

3D Energy Management System; 3D EMS tool (<https://oneplace.fbk.eu/3d/>)

The **3DEMS webGIS** tool allows the user to:



- (i) **navigate** through the urban environment at different altitudes and camera angles (based on **Cesium**);
- (ii) **visualize and interact** with LOD1 building models at urban scale, LOD2 building models at single building scale (selected pilots);
- (iii) **select** a building of interest and **retrieve** energy and other cadastral/building info, incl non spatial data;

The Online Energy Platform - OnePlace - the 3D EMS tool -

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EE Tools

3D Energy Management System; 3D EMS tool (<https://oneplace.fbk.eu/3d/>)

Example of web based visualization of **building geometry**
(LOD1 and LOD2) with associated **energy database**



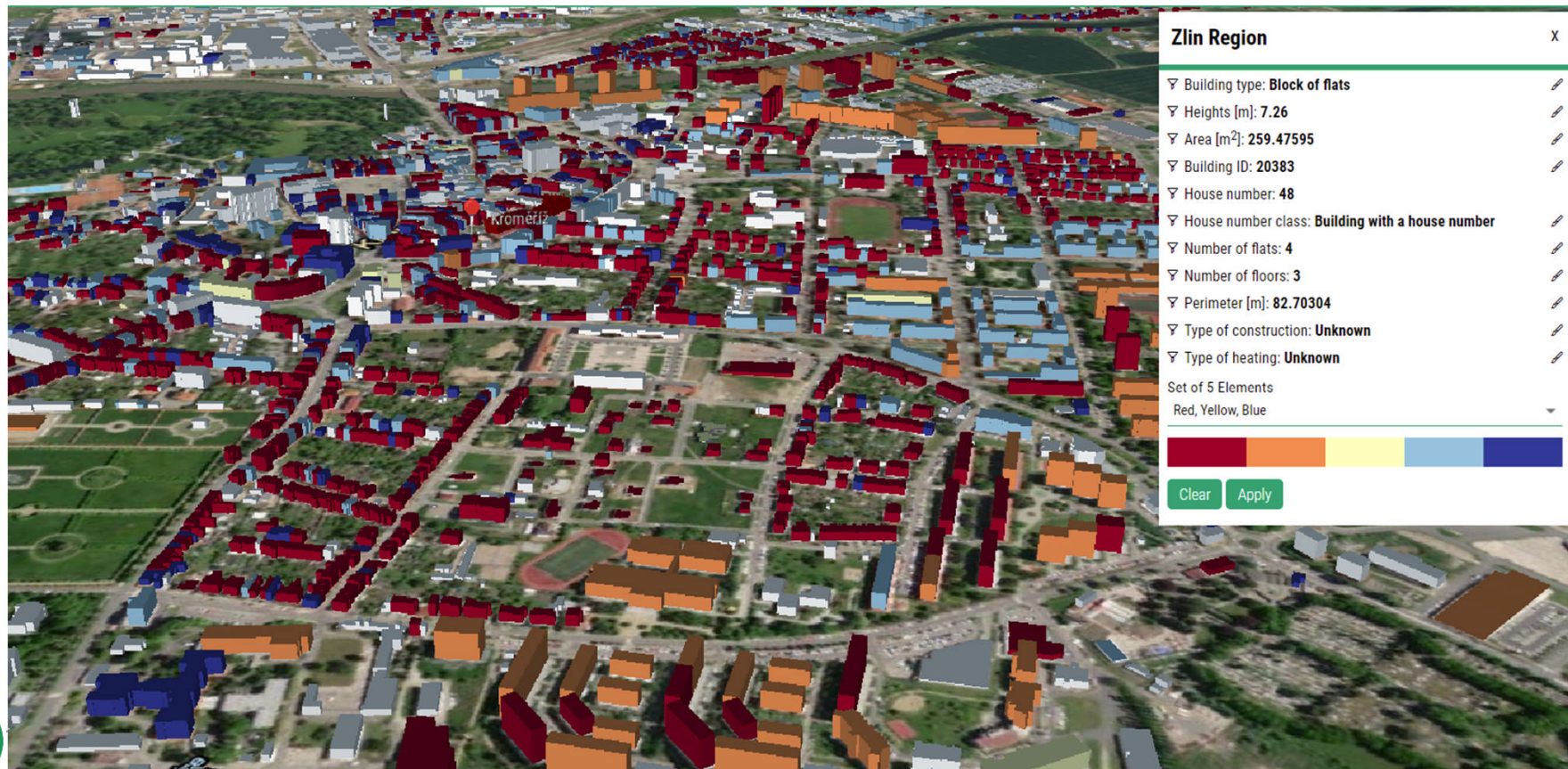
More than **10,000 buildings** were reconstructed in **LOD1**
(some 35 in LOD2) and visualized in 3D environment

The Online Energy Platform - OnePlace - the 3D EMS tool -

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3D Energy Management System; 3D EMS tool (<https://oneplace.fbk.eu/3d/>)

Example of **aggregation** functions within 3DEMS:
energy sources used for buildings' heating



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3D Energy Management System; 3D EMS tool (<https://oneplace.fbk.eu/3d/>)

Example of **aggregation** functions within 3DEMS:

height



The Online Energy Platform - OnePlace

The Online Energy Platform

1. OnePlace web-platform & 3D EMS tool (BOOSTEE-CE)
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The Online Energy Platform - OnePlace - the Energy Ghost simulator -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

Energy Ghost simulation game (Energy@School)

The aim of **ENERGY@SCHOOL App** is to collect and monitor the **energy consumption data of schools** by increasing user engagement. It can be used both from fixed and mobile devices and it provides:

- configuration of the school/classrooms to be monitored;
- temperature data for each class to be monitored and from any electrical/heat sensor;
- display of graphs for electrical/heat consumption on a specific date;
- gamification section.

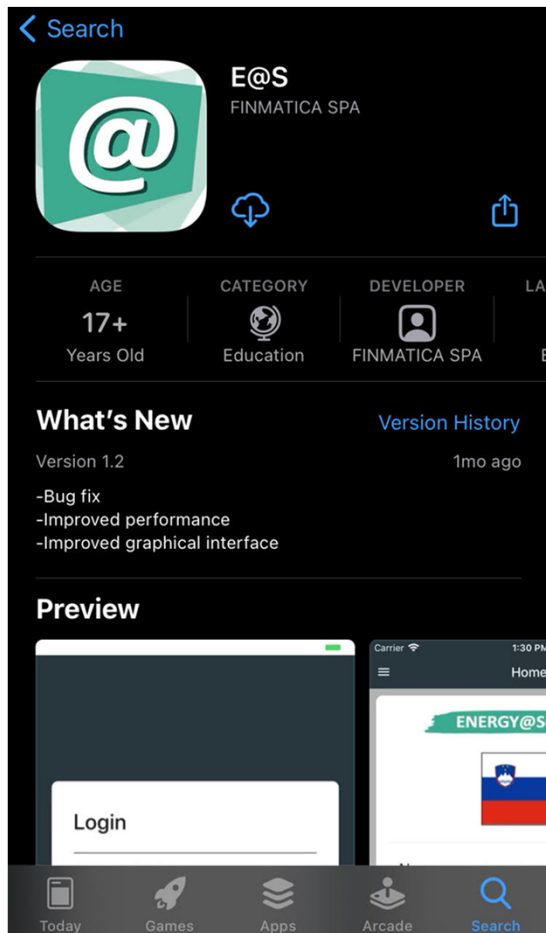


The Online Energy Platform - OnePlace - the Energy Ghost simulator -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**



Energy Ghost simulation game (Energy@School)



user: UserDemo
pass: demo2021

Login to register a new school

<https://energyatschool.finmatica.it/#/registrationlogin>

School Registration

anna EGT Password Confirm Password

School Name Address City Italy

Class Number

Sensor Name GJ

submit

Username and school name must have at least 5 characters

TUTORIALS:

- 1) <https://youtu.be/jb4bnOQhlWg>
- 2) <https://youtu.be/UmHaScT5L8E>
- 3) <https://youtu.be/x6YWVPVIMyUg>



The Online Energy Platform - OnePlace - the Energy Ghost simulator -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

Energy Ghost simulation game (Energy@School)

☰ **TARGET-CE**

Home / Dashboard

annaEGTC1 HOME

INSERT DATA

- Classrooms
- Sensors

VISUALIZE DATA

- Daily Report
- Ghosts Summary
- Score Summary
- Export Data

School info ⓘ

Name
anna EGTC 1

Address
test 1 - wroclaw, Poland

Score
107

Score Leaderboards (schools)

SchoolDemo	100
Primary School Celje	100
anna EGTC 1	107

Homepage structure

- Menu on the left, showing tools for users (classrooms, sensors, graphs).

The Online Energy Platform - OnePlace - the Energy Ghost simulator -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

Energy Ghost simulation game (Energy@School)

Data collection form

- By selecting a classroom, the user gets access to the data collection page
- Through a form, the user enters data on attendance and temperature in the chosen day
- Next to the form, a table with entered data shows up
- By selecting a sensor, the user may fill in a similar data collection form

Date Time	Presence	Temperature
19/11/2021 afternoon	✓	15 °C
19/11/2021 midday	✓	15 °C
19/11/2021 morning	✓	15 °C
18/11/2021 afternoon	X	21 °C
18/11/2021 midday	X	21 °C
18/11/2021 morning	X	21 °C



The Online Energy Platform - OnePlace - the Energy Ghost simulator -

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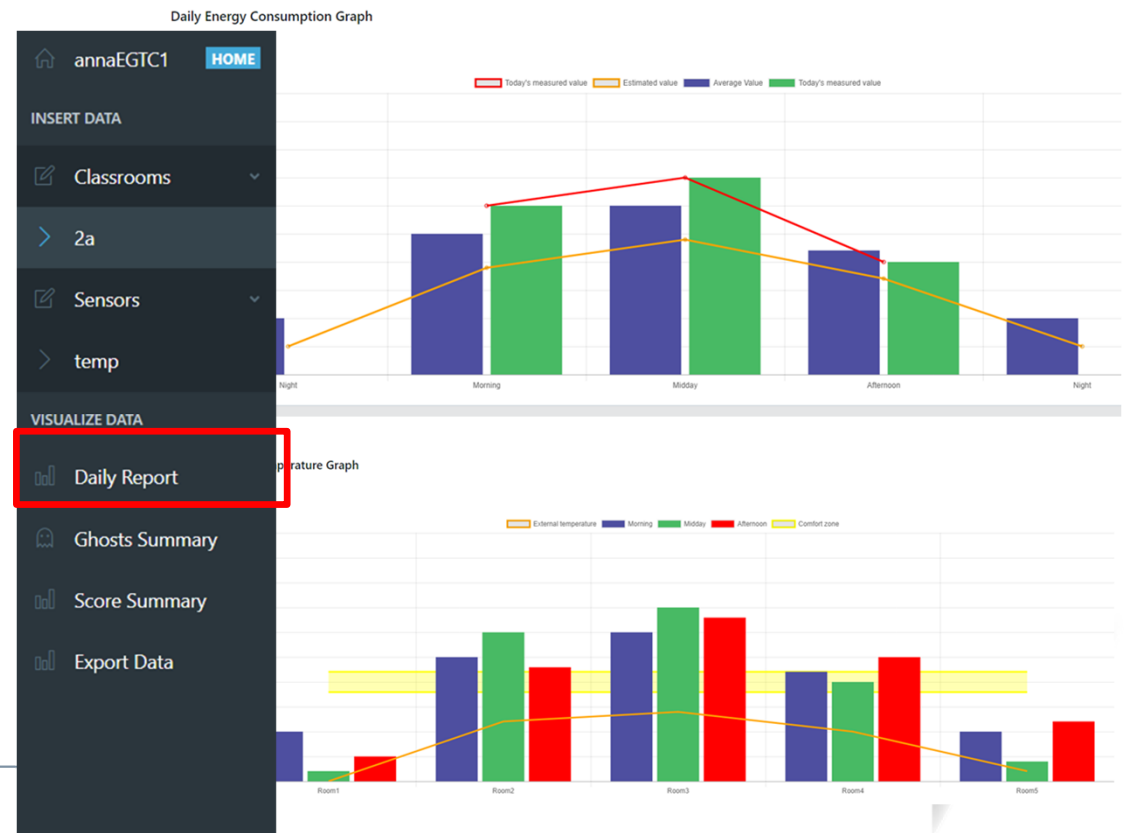
Energy Ghost simulation game (Energy@School)

Electric consumption graph

- Actual consumption in the morning / afternoon / night and baseline, measured by each smart meter
- Mean of actual consumption during the monitoring period

Classroom temperature graph

- T° measured in the fixed intervals
- External T° (measured by external web service)



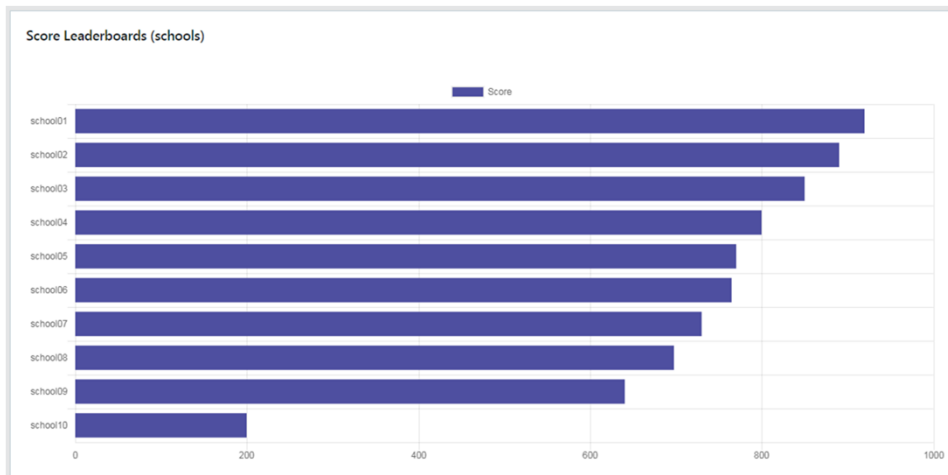
The Online Energy Platform - OnePlace - the Energy Ghost simulator -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

Energy Ghost simulation game (Energy@School)

SCORING OF SCHOOLS

- The scores of each school are represented in a bar graph which is updated based on the points acquired or lost during the game.



Ghosts Summary

Active Ghosts (click them to see details)



Solved Ghosts (click them to see details)



All you have to know about ghosts

Ghosts are alerts triggered by wrong energy consumption. They can be found after collecting data. First we have the elect

annaEGTC1 **HOME**

INSERT DATA

- Classrooms
- 2a
- Sensors
- temp

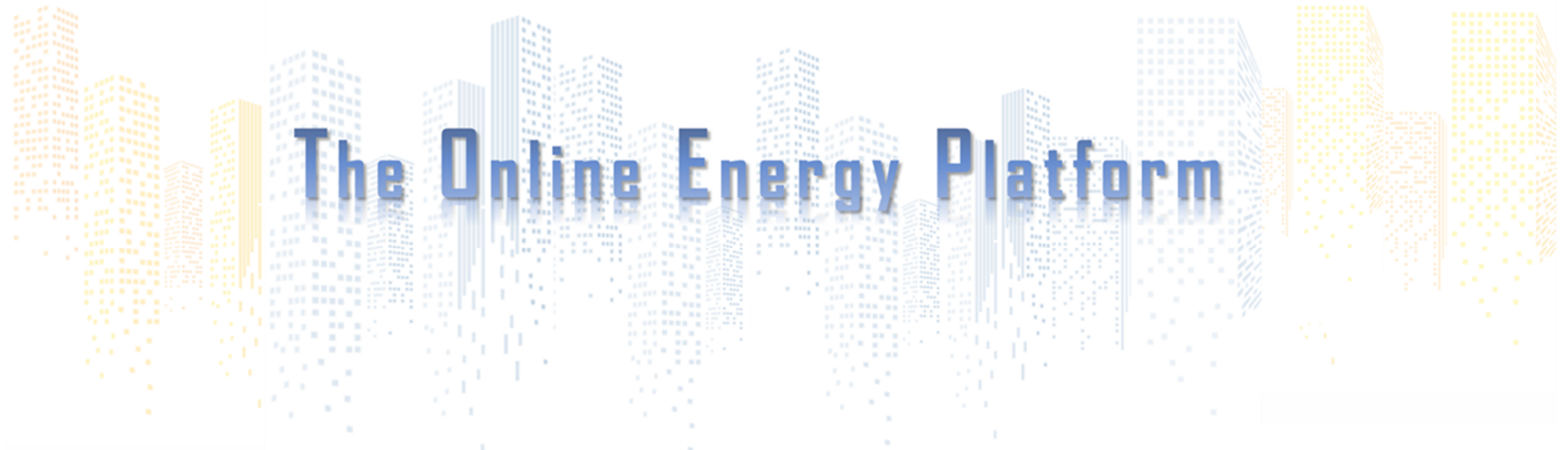
VISUALIZE DATA

- Daily Report
- Ghosts Summary**
- Score Summary
- Export Data

The ghost management is displayed in the **Ghosts Summary**: every time a ghost is generated it is added to the Active Ghosts list, while when a ghost is closed it switches to the Solved Ghosts list.



The Online Energy Platform - OnePlace



1. OnePlace web-platform & 3D EMS tool (BOOSTEE-CE)
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The Online Energy Platform - OnePlace - the Living EPC tool -

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Living EPC tool (eCentral)

WHAT IS THE LIVING EPC TOOL?

- Complex interactive web-based tool.
- Offers different combinations of cost-optimal measures for reaching nearly zero-energy building (nZEB) requirements.
- Based on inserted data from energy performance certificates, audit reports or energy consumption information.



The Online Energy Platform - OnePlace - the Living EPC tool -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

Living EPC tool (eCentral)

FOR WHO WAS DESIGNED AND WHY?



Local authorities

- For public building which they own or use.
- To facilitate their systematic monitoring of building stock.
- Supports them in identification of key project for energy renovation
- Offers concrete quantification of energy and financial indicators, resulting with achievement of nZEB standard.



The Online Energy Platform - OnePlace - the Living EPC tool -

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Living EPC tool (eCentral)

HOW DOES THE TOOL WORKS?

- The Living EPC tool is based on seasonal method of ISO 13790 (which is currently in use in various EU countries).
- Predefined values are used to simplify the process of data input and NZEB estimation.
- Currently the tool can be used in 6 countries: Croatia, Hungary, Italy, Austria, Slovenia and Poland. Which means that the tool is adapted to country specific legislation and specification regarding nZEB standard.



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Living EPC tool (eCentral)

eCentral



Register Login



Press the **Register** button to create a new account or **Login** button if you already have an account.



Project co-financed by the
European Regional
Development Fund

FORWARD

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Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

Living EPC tool (eCentral)

eCentral

The screenshot shows the eCentral web interface. At the top right, there is a language dropdown menu set to 'English' and a user profile icon labeled 'PROTOVNIK'. On the left side, there is a dark navigation menu with the following items: 'MAP' (highlighted with an orange box), 'BUILDINGS', 'BENCHMARKING', and 'TUTORIALS'. The main area displays a map of Central Europe with several green location markers. A text box with a white background and black border is overlaid on the map, containing the text 'Zoom on the map, to find the entered building.' Another text box with a white background and black border is overlaid on the top right of the map area, containing the text 'Select a language/country.'



The Online Energy Platform - OnePlace - the Living EPC tool -

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Living EPC tool (eCentral)

The screenshot shows the eCentral web application interface. On the left is a dark sidebar with navigation options: MAP, BUILDINGS, BENCHMARKING, and TUTORIALS. The main area is titled 'Map' and displays a satellite-style map of a residential area. A popup window is open over a building, containing the following information:

Name:	Jakljeva gaterija
Typology:	Cultural Buildings
Energy class:	D
Energy savings [%]:	0.51
Primary energy savings [%]:	7512.99
CO2 emission savings [t/year]:	1.79
Total investment [EUR]:	33066.90
Simple payback period [year]:	66.07
Edit building	

Below the popup, a text box states: "After locating a building, you can click on the icon and basic information will be shown."



The Online Energy Platform - OnePlace - the Living EPC tool -

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Living EPC tool (eCentral)

The screenshot displays the 'Detailed building data: Jakijeva galerija' page. The interface includes a sidebar with navigation options: MAP, BUILDINGS, BENCHMARKING, and TUTORIALS. The main content area features a tabbed menu with categories: BASIC INFO, BASIC INFO EC, ENERGY CONSUMPTION, BUILDING PARTS, VENTILATION, TERMOTECHNICAL SYSTEMS, LIGHTING, CURRENT BUILDING STATE, CALCULATION OPTIONS, NOTES, and NZEB. The 'Building basic info' section is active, showing a form with the following data:

Building basic info	
Basic Info	
Name	Jakijeva galerija
Building type	Cultural Buildings
Location Info	
Address	Zadreška cesta 35
Country	
City	
Municipality	Prihova
Zip code	3331

Additional text on the page includes: 'Objekt je zasnovan kot trisegmentna stavba, grajena v več delih. Prvi del je bil zgrajen okrog 1970 in je bil namenjen bivanju ene družine. Kasneje sta bila priložena še dva'.

Data input is divided into 8 tabs - more input data give more accurate results.

Data that cannot be provided/inserted are predefined!



The Online Energy Platform - OnePlace - the Living EPC tool -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

eCentral

Living EPC tool (eCentral)

EXAMPLE OF DATA INPUT

Edit basic info

Building name
Jakjeva galerija

Building image
Currently: images/SI_01_jakjeva_galerija.jpg
Clear
Change: Nobena datoteka ni izbrana

Building type
Cultural Buildings

Description
Objekt je zasnovan kot trisegmentna stavba, grajena v več delih. Prvi del je bil zgrajen okrog 1970 in je bil namenjen bivanju ene družine. Kasneje sta bila prizidana še dva segmenta, ki sta služila kot slikarski ateleje umetnika Jožeta Horvata - Jakja. Danes je objekt v lasti Občine Nazarje, ki ga je v letu 2003 tudi delno obnovila. V njem se nahaja galerija s stalno razstavo del Jožeta Horvata - Jakja, galerija za gostujoče umetnike ter center za samostojno učenje pod vodstvom Ljudske univerze Velenje.

Year of construction
1,970

Building owner name
Občina Nazarje

Address
Zadrebka cesta 35

City
Nazarje

Zip code
3331

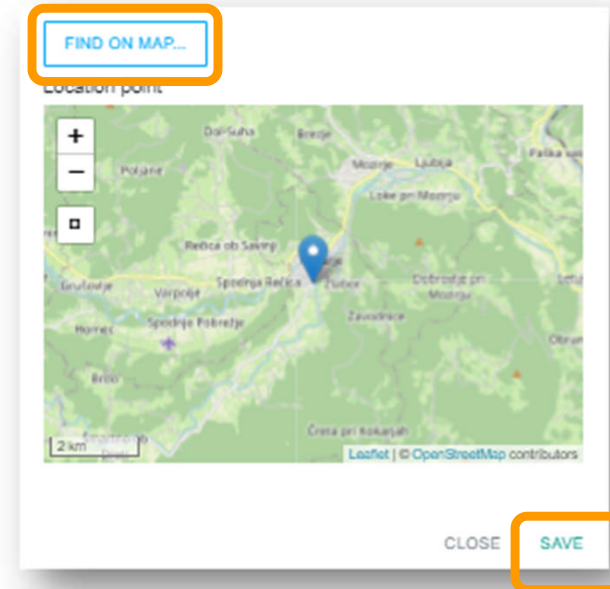
Country
Slovenia

Cadastral reference
036

Municipality
Prihova
Municipality of cadastral registry

It is important to select the building type.

If the correct address (city, street) is filled - user can click FIND ON MAP button and the tool will show the building location on the map.



Don't forget to save your work!

The Online Energy Platform - OnePlace - the Living EPC tool -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

Living EPC tool (eCentral)

EXAMPLE OF DATA INPUT

Add external wall

Name*

Renovation surface [m²]*

Current thermal insulation thickness

Heat transfer coefficient [W/m²K]*
0.0

Included in renovation
Determines whether the building part should be included in renovation

CLOSE ADD

Define the surface that needs to be renovated.

It can be calculated by the tool using the Database predictions

When selecting thermal insulation thickness, heat transfer coefficient will be selected automatically, but you can modify it, if needed.

Here is an option, whether you would like to include this building part in the calculations.

Click on ADD button to save.

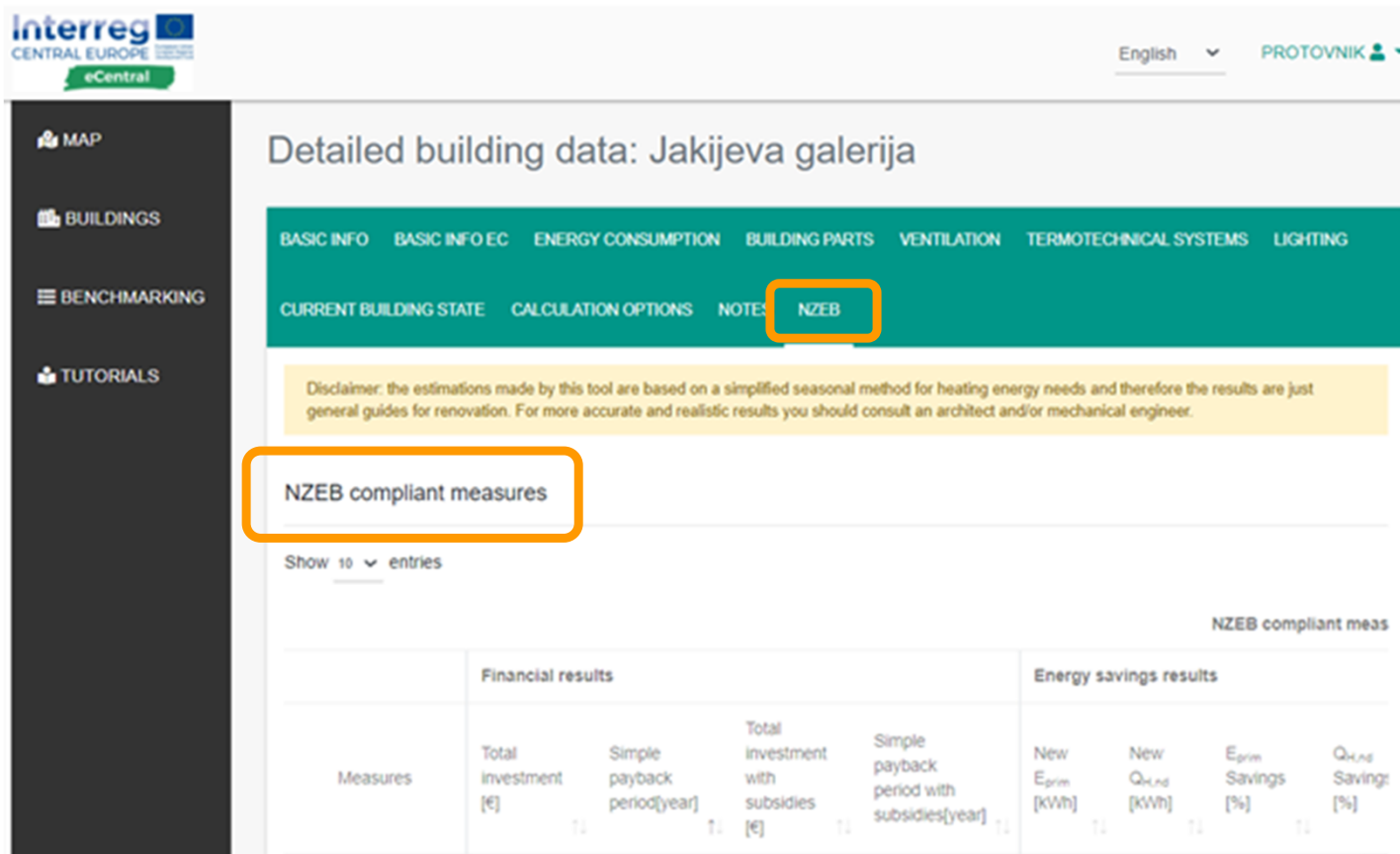


The Online Energy Platform - OnePlace - the Living EPC tool -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**



Living EPC tool (eCentral)



Interreg CENTRAL EUROPE eCentral English PROTOVNIK

Detailed building data: Jakijeva galerija

BASIC INFO BASIC INFO EC ENERGY CONSUMPTION BUILDING PARTS VENTILATION TERMOTECHNICAL SYSTEMS LIGHTING

CURRENT BUILDING STATE CALCULATION OPTIONS NOTES **NZEB**

Disclaimer: the estimations made by this tool are based on a simplified seasonal method for heating energy needs and therefore the results are just general guides for renovation. For more accurate and realistic results you should consult an architect and/or mechanical engineer.

NZEB compliant measures

Show 10 entries

Measures	Financial results				Energy savings results			
	Total investment [€]	Simple payback period[year]	Total investment with subsidies [€]	Simple payback period with subsidies[year]	New E _{prim} [kWh]	New Q _{HL,LD} [kWh]	E _{prim} Savings [%]	Q _{HL,LD} Savings [%]
	11	11	11	11	11	11	11	11

Here you can find all possible combinations of measures for achieving the nZEB standard in accordance with the current legislation for specific country.



The Online Energy Platform - OnePlace - the Living EPC tool -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

Living EPC tool (eCentral)

NZEB compliant measures

Show 10 entries

Measures	Financial results				Energy savings results								Permitted values			
	Total investment [€]	Simple payback period [year]	Total investment with subsidies [€]	Simple payback period with subsidies [year]	New E _{prim} [kWh]	New Q _{H,LD} [kWh]	E _{prim} Savings [%]	Q _{H,LD} Savings [%]	New E _{prim} [kWh/m ²]	New Q _{H,LD} [kWh/m ²]	Renewable energy [%]	CO ₂ emissions reduction [t/year]	E _{prim} permitted [kWh/m ²]	Q _{H,LD} permitted [kWh/m ²]	Needed renewable energy percentage [%]	NZEB standard satisfied
<input checked="" type="checkbox"/> Vhodna vrata prenova, Garažna vrata prenova, Tla proti neogrevani kleti prenova, Okno J prenova, Okno S prenova, Okno Z prenova, Okno V prenova, Zamenjava sistema razsvetljave	33.966.90	66.07	33.966.90	66.07	21.470.83	55.207.52	25.92	8.51	59.81	153.78	86.11	1.79	65.00	—	50.00	Yes

Results are presented through financial and energy savings perspective.



The Online Energy Platform - OnePlace - the Living EPC tool -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**



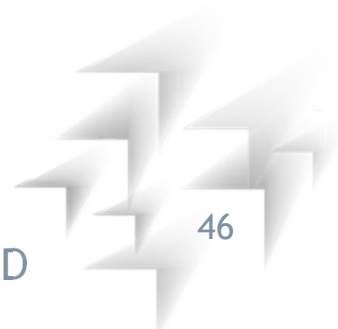
Living EPC tool (eCentral)

NZEB non-compliant measures

Show 10 entries

Measures	Financial results				Energy savings results								Permitted values			
	Total investment [€]	Simple payback period [year]	Total investment with subsidies [€]	Simple payback period with subsidies [year]	New E _{prim} [kWh]	New Q _{h,nd} [kWh]	E _{prim} Savings [%]	Q _{h,nd} Savings [%]	New E _{prim} [kWh/m ²]	New Q _{h,nd} [kWh/m ²]	Renewable energy [%]	CO ₂ emissions reduction [t/year]	E _{prim} permitted [kWh/m ²]	Q _{h,nd} permitted [kWh/m ²]	Needed renewable energy percentage [%]	NZEB standard satisfied

If the tool cannot estimate nZEB potential- user will receive information about renovation measures which is possible to implement in order to achieve certain level of energy savings.



The Online Energy Platform - OnePlace - the Living EPC tool -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

Living EPC tool (eCentral)

Benchmarking

Filters

ADD FILTER

Buildings

SELECT ALL DESELECT ALL

Search: _____

Basic info						Financial results			
Name	Building typology	Total net heated area [m ²]	Country	Energy class	Is NZEB satisfied	Total investment [€]	Simple payback period [year]	Total investment with subsidies [€]	Simple payback period with subsidies [yr]

Benchmarking offers a possibility for comparison between selected buildings and also extracting a report for selected buildings.



The Online Energy Platform - OnePlace - the Living EPC tool -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**



Living EPC tool (eCentral)

Buildings ▾

SELECT ALL DESELECT ALL

Search: _____

Basic info						Financial results				Energy savings results							
Name	Building typology	Total net heated area [m ²]	Country	Energy class	Is NZEB satisfied	Total investment [€]	Simple payback period [year]	Total investment with subsidies [€]	Simple payback period with subsidies [year]	New E _{prim} [kWh]	New Q _{ind} [kWh]	E _{prim} Savings [%]	Q _{ind} Savings [%]	New E _{prim} [kWh/m ²]	New Q _{ind} [kWh/m ²]	Renewable energy [%]	CO ₂ emissions reduction [t/year]
Jubizna potirna	Cultural Buildings	359.00	Slovenia	D	Yes	33,966.90	66.97	33,966.90	66.97	21,470.83	55,297.52	25.92	8.51	59.81	153.78	86.11	1.79
Gasliri dom Nazarje	Cultural Buildings	566.90	Slovenia	Not known	Yes	61,470.85	6.95	61,470.85	6.95	23,550.27	27,515.04	44.36	77.76	41.54	48.54	75.49	6.53
Dom kulture Nazarje	Cultural Buildings	1,220.35	Slovenia	Not known	Yes	46,147.45	5.60	46,147.45	5.60	66,901.27	300,843.90	61.57	10.74	54.82	245.87	96.54	25.12
Grad Vrbavec	Cultural Buildings	310.00	Slovenia	Not known	Yes	46,486.00	24.47	46,486.00	24.47	12,187.60	47,779.87	42.90	44.28	39.25	154.13	94.53	2.39
	Cultural	2,457.00	Slovenia	Not known	Yes	181,667.22	7.60	81,178.18	7.08	115,660.00	417,187.91	85.79	11.44	45.69	163.10	95.05	110.48

Get report for selected buildings


You can download the report for all selected buildings.



The Online Energy Platform - OnePlace - the Living EPC tool -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

Living EPC tool (eCentral)

Charts 

View type: **Custom**

Calculation type: Total investment [€]

Chart type: Bar chart

ADD **REMOVE ALL CHARTS**

Default view will show charts from measures summary, custom will allow you to create various charts of interest.

There is the possibility to create customized charts.

- Total investment [€]
- Net heated area [m2]**
- Total investment [€]
- Simple payback period [year]
- Total investment with subsidies [€]
- Simple payback period with subsidies [year]
- New Eprim [kWh]
- New QH.nd [kWh]
- Eprim Savings [%]
- QH.nd Savings [%]
- New Eprim [kWh/m2]
- New QH.nd [kWh/m2]
- Renewable energy [%]
- CO2 emissions reduction [t/year]

Charts can be based on different calculation type and for several selected buildings at the time.

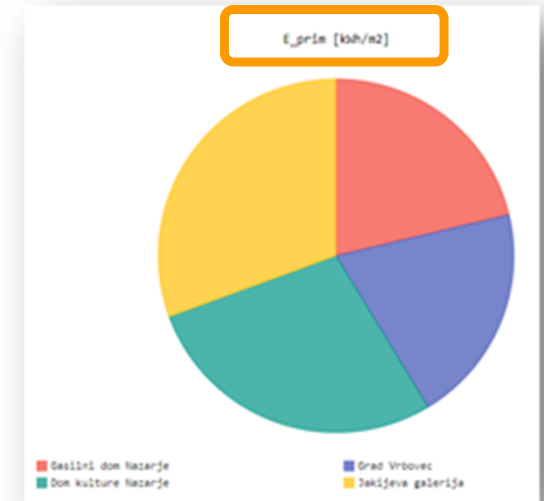
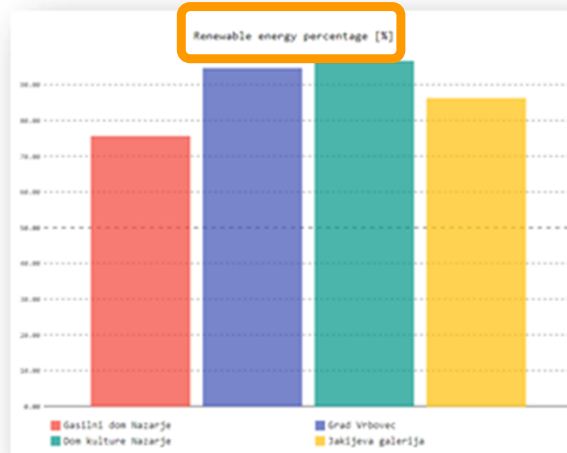
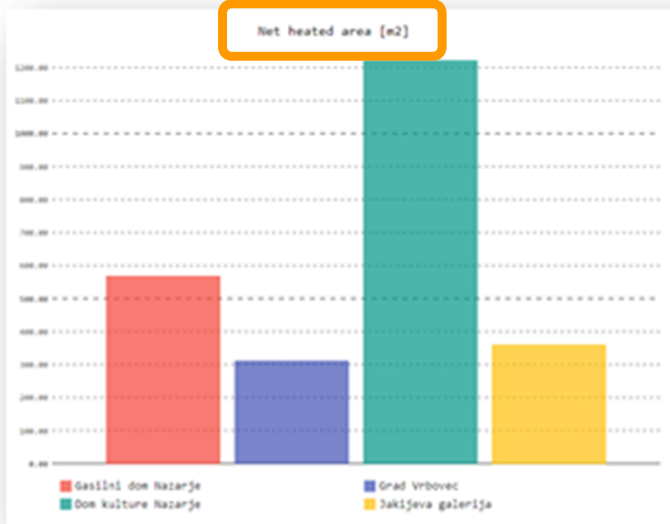


The Online Energy Platform - OnePlace - the Living EPC tool -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**



Living EPC tool (eCentral)



The Online Energy Platform - OnePlace - the Living EPC tool -



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Living EPC tool (eCentral)

Link to the tool: <https://nzeb.thorium.software/>

Demo account

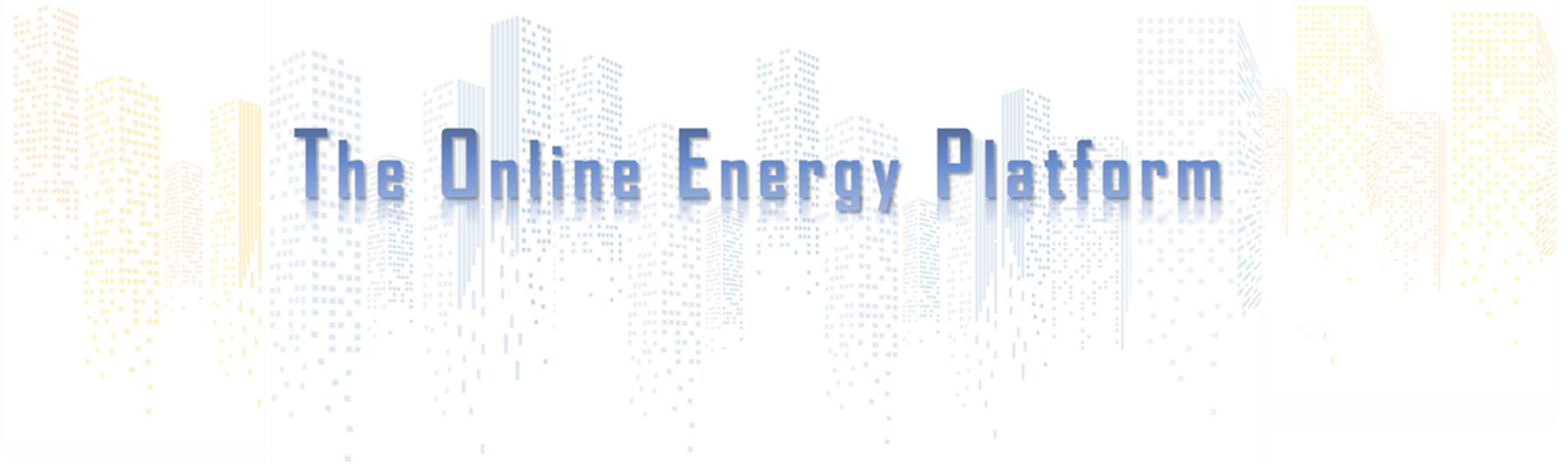
User name: kssenatarget

Password: target2020

Disclaimer: the estimations made by this tool are based on a simplified seasonal method for heating energy needs and therefore the results are just general guides for renovation. For more accurate and realistic results you should consult an architect and/or mechanical engineer.



The Online Energy Platform - OnePlace



1. OnePlace web-platform & 3D EMS tool (BOOSTEE-CE)
2. Energy Ghost simulation game (Energy@School)
3. Living Energy Performance Certificate managing tool & database (eCentral)
- 4. Energy Dashboard (CitiEnGov Toolkit)**
5. Stickers for behavioral change (GreenSoul)



The Online Energy Platform - OnePlace - the Energy Dashboard -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

[Energy Dashboard \(CitiEnGov Toolkit\) - http://toolkit.citiengov.eu/](http://toolkit.citiengov.eu/)

- A solution to **better deal with energy-related data** about buildings, mobility and public lighting
- It was developed following the **need for harmonized energy-related data**
- Better / harmonized data implies a **better knowledge** about supply & demand of energy resources - including their spatial distribution within urban areas, thus to **enable effective scenario modelling** and to **support overall policy processes**
- Development of the CitiEnGov harmonized data model, based on INSPIRE EU Directive (<https://inspire.ec.europa.eu/>)

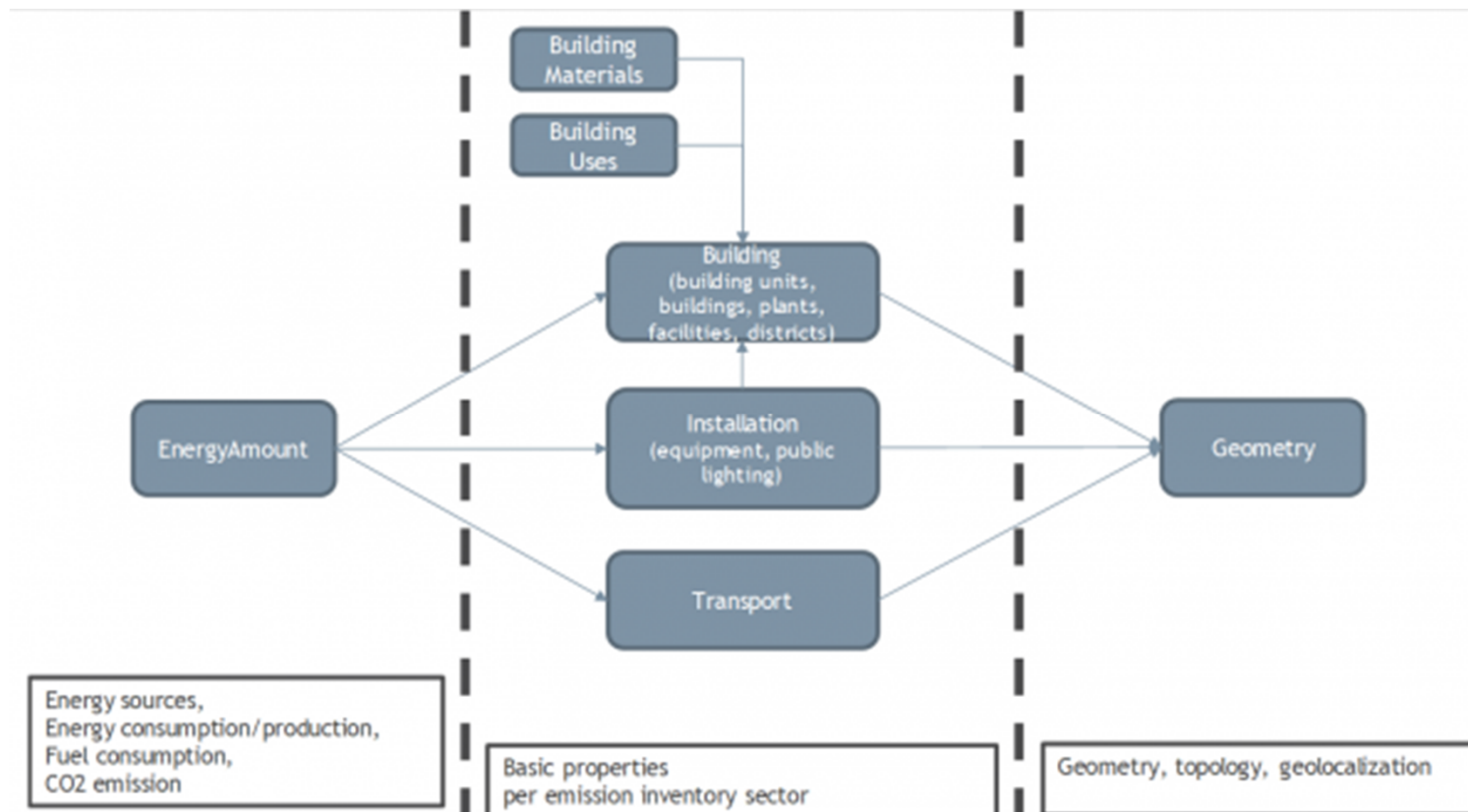


The Online Energy Platform - OnePlace - the Energy Dashboard -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

[Energy Dashboard \(CitiEnGov Toolkit\) - http://toolkit.citiengov.eu/](http://toolkit.citiengov.eu/)

- ❑ Conceptual data model based on the INSPIRE Data Specifications



The Online Energy Platform - OnePlace - the Energy Dashboard -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

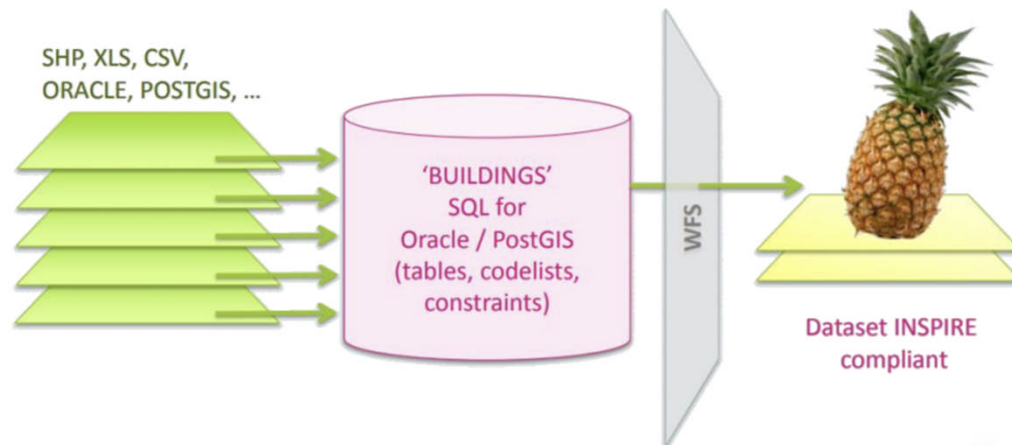
Energy Dashboard (CitiEnGov Toolkit) - <http://toolkit.citiengov.eu/>

- ❑ Implementation of the data model based on two different platforms mostly used, Oracle and PostgreSQL/PostGIS.

- ❑ The SQL scripts for creating the database are available at

http://toolkit.citiengov.eu/images/4/4e/CitiEnGov_Data_Model_Oracle.pdf

http://toolkit.citiengov.eu/images/4/4a/CitiEnGov_Data_Model_PostGIS.pdf



The Online Energy Platform - OnePlace - the Energy Dashboard -



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[Energy Dashboard \(CitiEnGov Toolkit\) - http://toolkit.citiengov.eu/](http://toolkit.citiengov.eu/)

DEMO

<http://sit.comune.fe.it/geonext/login.html>



The Online Energy Platform - OnePlace - the Energy Dashboard -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

[Energy Dashboard \(CitiEnGov Toolkit\) - http://toolkit.citiengov.eu/](http://toolkit.citiengov.eu/)

The screenshot shows the CitiEnGov Energy Dashboard interface. The main map displays an aerial view of Ferrara, Italy, with numerous colored markers and overlays representing energy infrastructure and data. The interface includes a toolbar at the top with various navigation and tool icons. On the right side, there is a legend titled 'Catalogo' with sections for 'Mappe di base' and 'Aree tematiche'. The 'Aree tematiche' section is expanded, showing several checked layers: 'CitiEnGov_energia', 'Edifici del territorio', 'Impianti comunali', 'Impianti del territorio', and 'Unita energetiche comunali'. Under 'Unita energetiche comunali', several sub-layers are also checked, including 'Anagrafica_UE', 'Consumi_elettrici_UE', 'Consumi_termici_UE', 'Etichetta_energetica_UE', and 'Stima_emissioni_CO2_UE'. A scale bar at the bottom left indicates 500 meters. The bottom right corner of the map area shows 'Mappa di sintesi'.

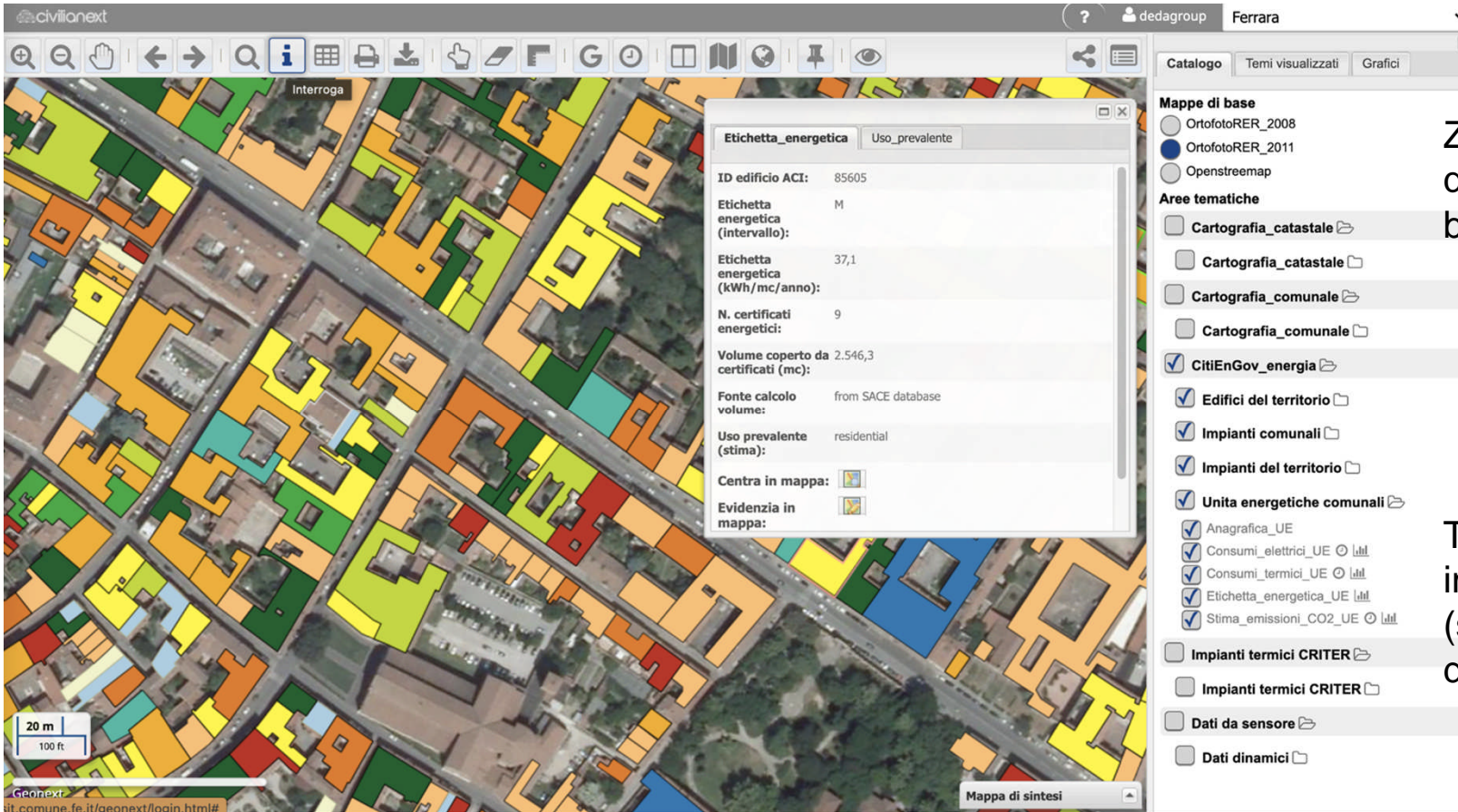
Activate of shown layers



The Online Energy Platform - OnePlace - the Energy Dashboard -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

[Energy Dashboard \(CitiEnGov Toolkit\) - http://toolkit.citiengov.eu/](http://toolkit.citiengov.eu/)



The screenshot shows the CitiEnGov Energy Dashboard interface. The main map displays a city center with buildings color-coded by energy efficiency. A popup window titled "Etichetta_energetica" is open over a specific building, showing the following data:

Etichetta_energetica	Usso_prevalente
ID edificio ACI: 85605	
Etichetta energetica (intervallo): M	
Etichetta energetica (kWh/mc/anno): 37,1	
N. certificati energetici: 9	
Volume coperto da certificati (mc): 2.546,3	
Fonte calcolo volume: from SACE database	
Usso prevalente (stima): residential	
Centra in mappa:	<input type="checkbox"/>
Evidenzia in mappa:	<input type="checkbox"/>

The interface also includes a toolbar with navigation and search tools, a sidebar with a "Catalogo" menu, and a "Mappe di base" section with options like "OrtofotoreR_2008", "OrtofotoreR_2011", and "Openstreemap". The "Aree tematiche" section is expanded to show "CitiEnGov_energia" and "Edifici del territorio".

Zoom to the city center and query a building using the *i* button ("Interroga")

The energy-related information of the building (stored with the Citiengov data model) are popped-up

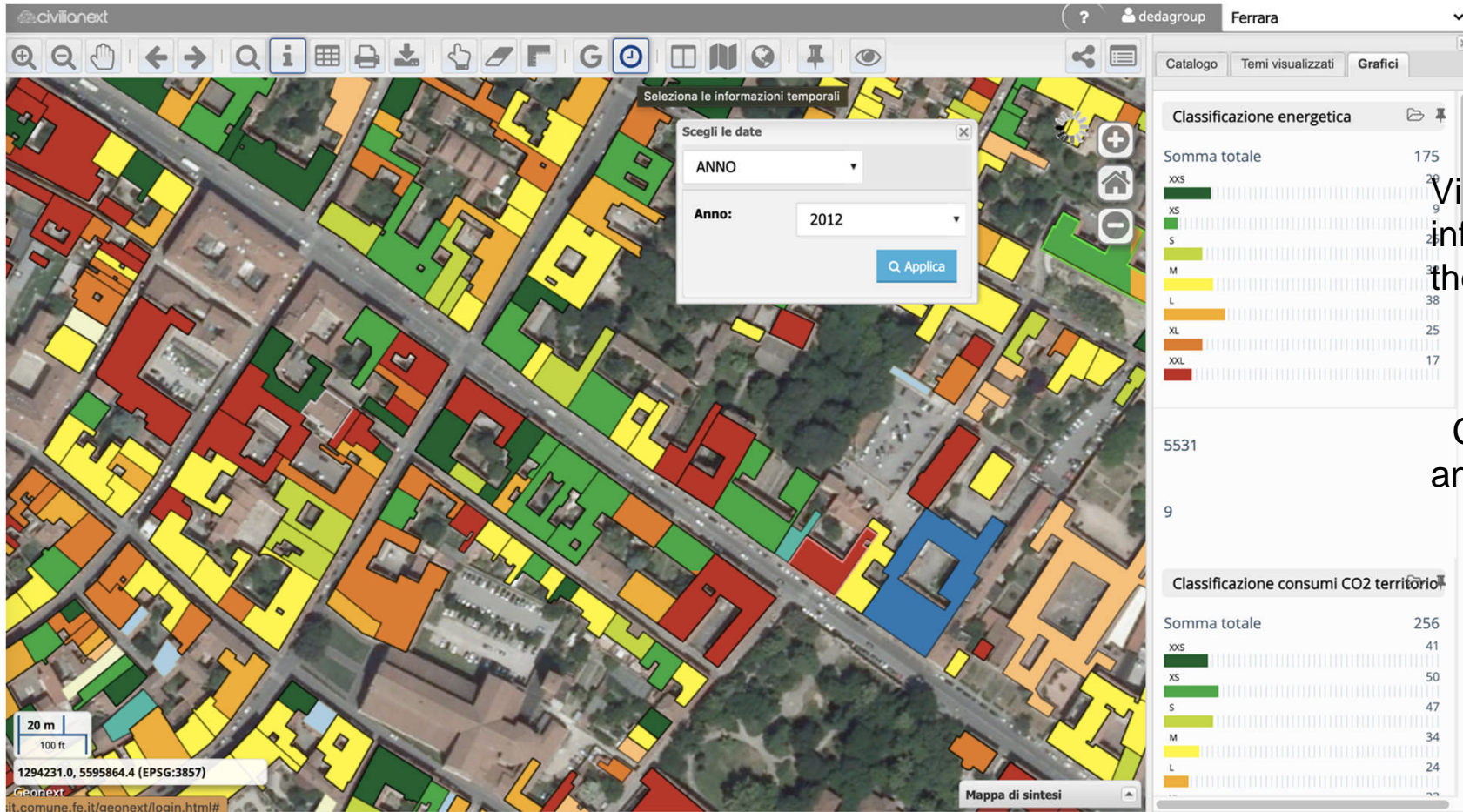


The Online Energy Platform - OnePlace - the Energy Dashboard -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**




[Energy Dashboard \(CitiEnGov Toolkit\) - http://toolkit.citiengov.eu/](http://toolkit.citiengov.eu/)



The screenshot shows the CitiEnGov Energy Dashboard interface. The main map displays a city area with buildings color-coded by energy classification. A 'Seleziona le informazioni temporali' dialog box is open, allowing the user to select a year (2012) and apply the filter. The right-hand panel shows the 'Classificazione energetica' results, including a bar chart and a table of counts for each energy class (XXS, XS, S, M, L, XL, XXL).

Classificazione energetica	Conteggio
Somma totale	175
XXS	20
XS	9
S	21
M	33
L	38
XL	25
XXL	17

Classificazione consumi CO2 territorio	Conteggio
Somma totale	256
XXS	41
XS	50
S	47
M	34
L	24
XL	22

Visualized energy-related information per year using the icon 

Choose the year (2012) and Apply to see results in the visualized area/quartier

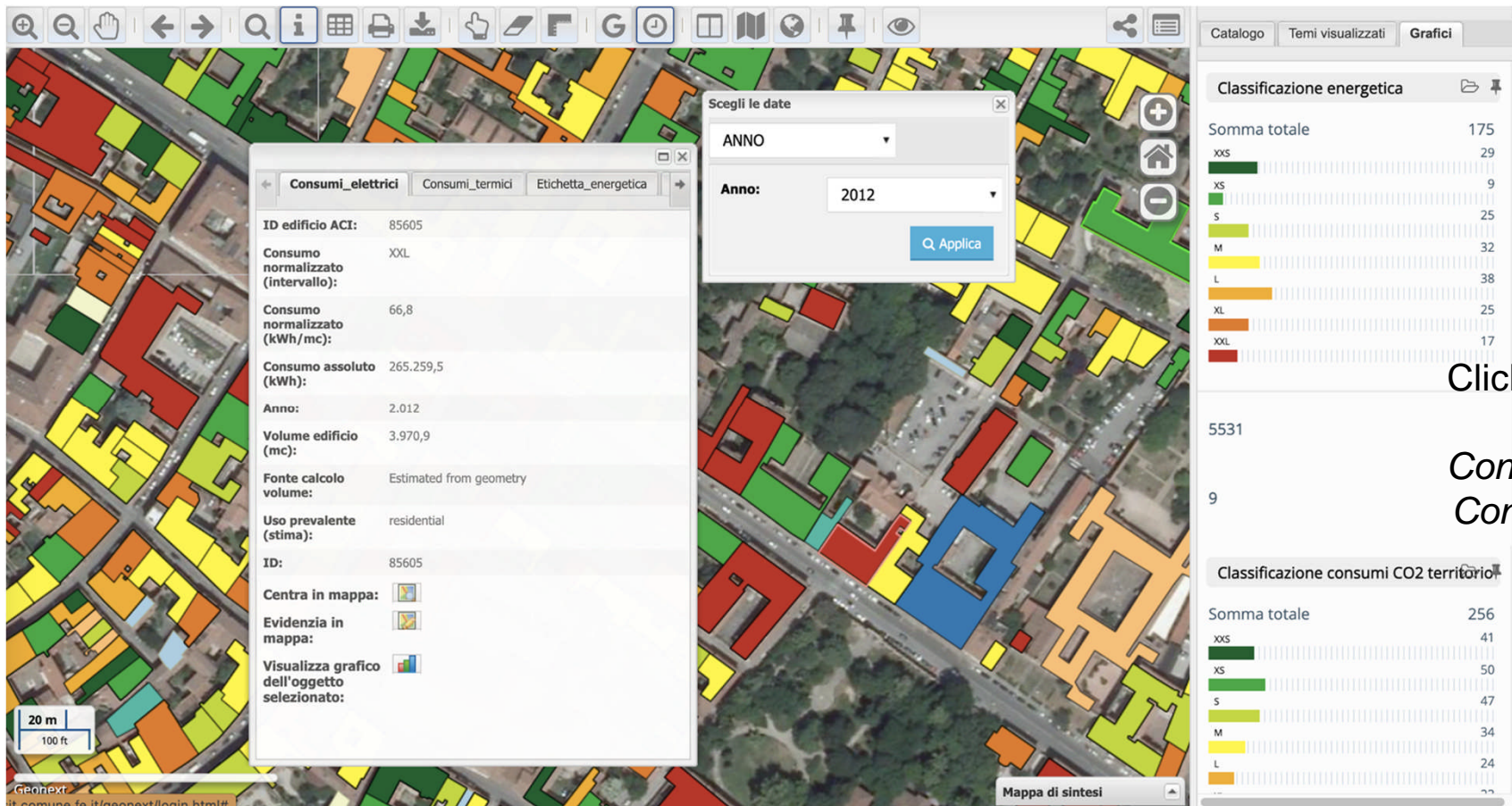


The Online Energy Platform - OnePlace - the Energy Dashboard -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**



[Energy Dashboard \(CitiEnGov Toolkit\) - http://toolkit.citiengov.eu/](http://toolkit.citiengov.eu/)



The screenshot displays the Energy Dashboard interface. On the left, a map shows buildings color-coded by energy classification. A data panel for a selected building (ID 85605) shows the following information:

- Consumo elettrici: 85605
- Consumo normalizzato (intervallo): XXL
- Consumo normalizzato (kWh/mc): 66,8
- Consumo assoluto (kWh): 265.259,5
- Anno: 2.012
- Volume edificio (mc): 3.970,9
- Fonte calcolo volume: Estimated from geometry
- Uso prevalente (stima): residential
- ID: 85605
- Centra in mappa: [Icon]
- Evidenzia in mappa: [Icon]
- Visualizza grafico dell'oggetto selezionato: [Icon]

A date selection dialog is open, showing 'ANNO' set to 2012. On the right, two bar charts show energy classification distributions:

Classificazione energetica

Somma totale	175
XXS	29
XS	9
S	25
M	32
L	38
XL	25
XXL	17

Classificazione consumi CO2 territorio

Somma totale	256
XXS	41
XS	50
S	47
M	34
L	24
XL	24
XXL	22

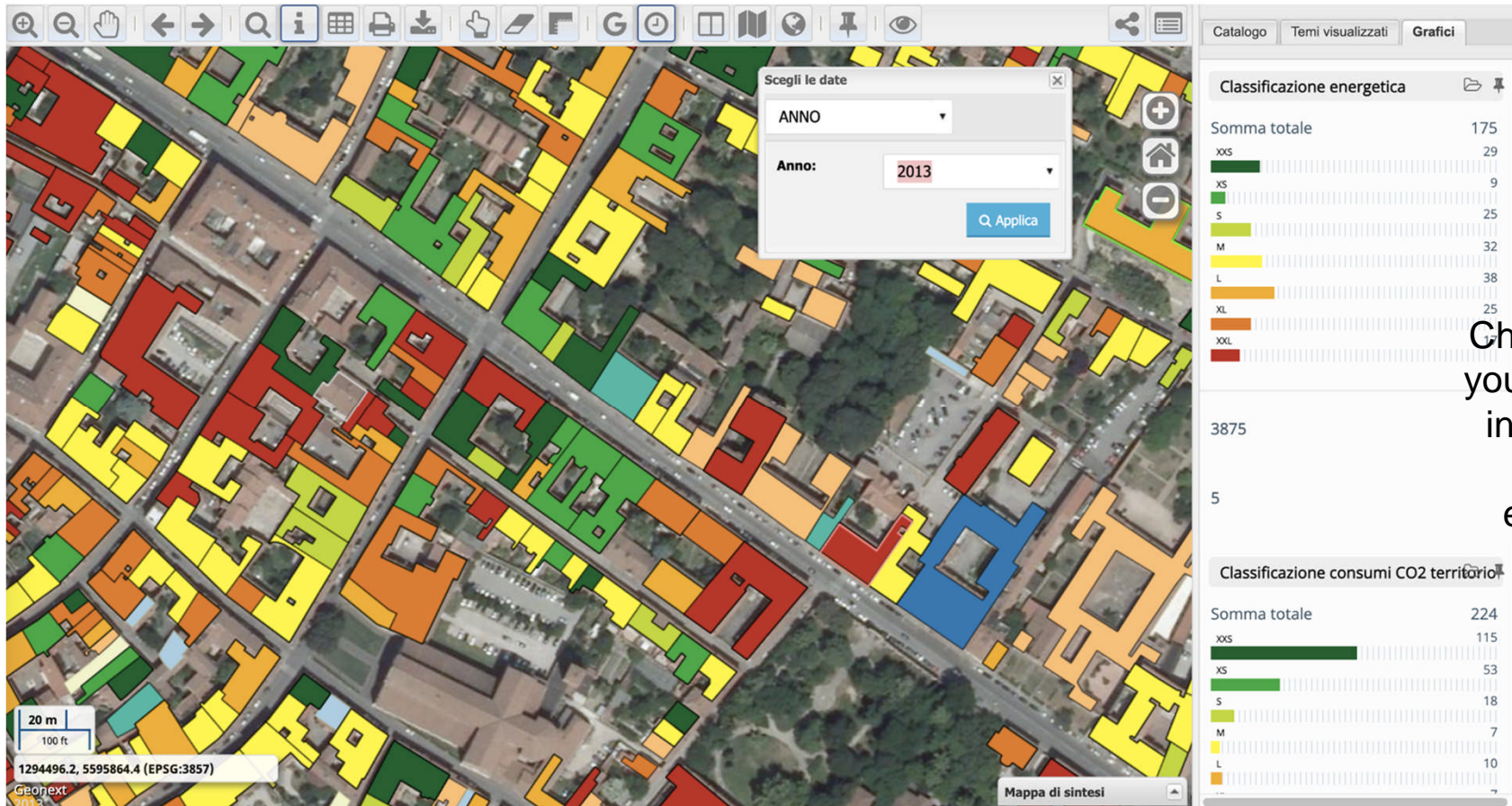
Click on a specific building to see its *Electric Consumption* and *Thermal Consumption* data for that specific year



The Online Energy Platform - OnePlace - the Energy Dashboard -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**

[Energy Dashboard \(CitiEnGov Toolkit\) - http://toolkit.citiengov.eu/](http://toolkit.citiengov.eu/)



Changing the year (2013) you might notice changing in the building colors, ie changes in the their energy consumptions

The Online Energy Platform - OnePlace

The Online Energy Platform

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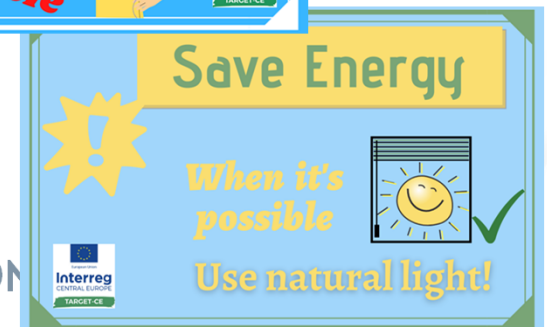
The Online Energy Platform - OnePlace - the Energy Dashboard -

Capitalized Projects Marketplace EE Cities EE Strategies EE Finances **EE Tools**



Stickers for behavioral change

- ❑ Series of **printable stickers** to motivate people to save energy, change behavior wrt to energy, support the environment and act sustainable
- ❑ Slightly adaptation from the material produced within the H2020 **GreenSould** project
- ❑ Stickers available in English, Italian, German, Polish, Slovenian and Czech languages



THEMATIC MODULE #1

<https://oneplace.fbk.eu/>

The Online Energy Platform

OnePlace

Thank you for your attention

