Warsaw Energy
Use Sensibly!

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Increasing Energy Performance in Warsaw

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City of Warsaw – main features

517 km²
administrative area

1.75 million
inhabitants within this area
4.4% population of Poland

3.3 million
inhabitants within agglomeration
8.6% population of Poland

€ 3.78 billion
Planned budget expenditures for 2017

3,2%
unemployment rate
7.7% - Poland

260 000 students
18% of students in Poland

1.375 million
registered vehicles
6.2% of registered vehicles in Poland

360 000
registered enterprises
5.6% of registered enterprises in Poland

30%
green space

Warsaw sustainable development MILESTONES

VETURILO
WARSZAWSKI ROWER PUBLICZNY

2008 – Climate Protection Committee

2009 – Warsaw joined Covenant of Mayors (founder member)

2011 – Sustainable Energy Action Plan adopted by City Council

2011 – First buses using alternative fuels (hybrid)

2012 – Launch of "Veturilo" bike-sharing system

2013 – Warsaw bus fleet consists of only low floor and low emission buses

2014 – 9,6% lower CO_2 emissions

2015 – 35 gas and 10 electric buses joined Warsaw fleet

2015 – Low-Emission Plan for Warsaw adopted by City Council

Covenant of Mayors
Committed to urban sustainable energy

Sustainable Energy Action Plan

SEAP target

Reduction of GHG emissions and improvement of energy efficiency

20%	**20%**	**20%**
CO_2 emission reduction in 2020	energy consumption reduction in 2020	energy produced from RES

information and promotion actions regarding energy management/conservation

SEAP target for 2020 compared to the base year 2007

Year	Energy consumption [MWh/year]	CO_2 emission [$MgCO_2$/year]
2007	28 394 431	12 952 984
2020	**22 715 545**	**10 362 387**

SEAP main activities

Tasks	Planned energy savings in 2020	Reduction of CO_2 in 2020	Investments
	[MWh/a]	[t/a]	[million €]
Complex buildings retrofit (housing, service, public, sectors)	2 909 701	864 180	1 823
Modernization of heating system (e.g. replacement of local heat sources with more efficient heat sources)	105 000	31 185	87
Modernization of heating network	50 400	14 969	250
Modernization of lighting	140 228	137 703	34
Modernization and development of public transportation system	3 268 766	843 342	950

Low-carbon Economy Action Plan

Dec. 2015 – adopted by the City Council

Goals of the Low-carbon Economy Action Plan

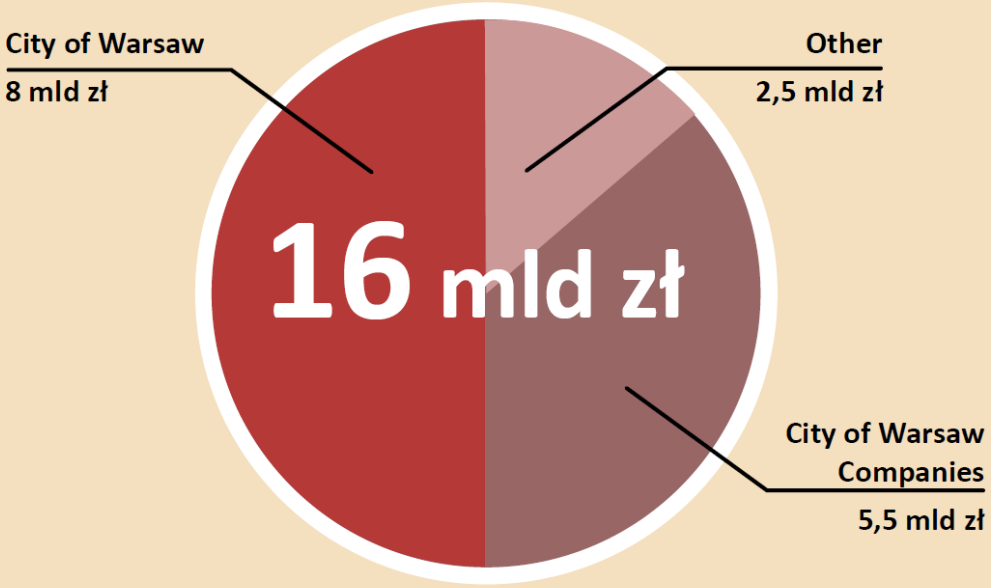
support in achieving the objectives set out in the climate and energy package

- **CO_2 emission reduction**
- **Reduction of energy use**
- **Increasing share of RES**
- **Increasing energy efficiency**

improving air quality in the City

increasing the quality of life of residents and competitiveness of the economy

Budget of the Low-carbon Economy Action Plan



Investment activities:

Development of heating network

Extension of 2nd metro line

New bicycle paths

Greenery development

New rolling stock

New tram lines

Low-emission buses

Park&Ride Parkings

Complementary activities:

Streets cleaning

Warsaw Air Quality Index

Municipal police inspections

Lorries controls

Low-carbon Economy Action Plan
EXAMPLES OF INVESTMENTS

Public transportation

- New tram lines – Wilanów, Gocław
- **130** e-buses
- Development of bicycle paths
- II metro line
- New energy efficient trams
- Expansion of „Veturilo" system

District heating

- **131** social buildings connected to district heating in 2010-2016
- **229** social buildings connected to district heating in 2016-2020
- Cooperation between Veolia, TERMIKA and City of Warsaw

Energy production and distribution

- Expansion of the heating network – connection of public and private buildings
- Introduction of RES for electricity and heat production production

Green buildings in Warsaw

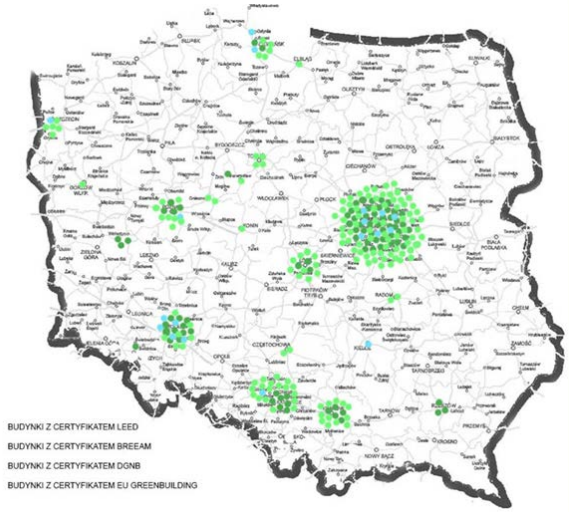
SEAP assumes thermal retrofitting of existing and building of new buildings:

230 mln € complex retrofitting of public buildings	**0,5 mln m²** passive buildings	**1 mln m²** low-energy buildings	**2 mln m²** energy-efficient buildings

Green buildings – comparison of the largest cities in Poland

	BREEAM	LEED
Warsaw	130	38
Krakow	29	5
Poznan	12	9
Wroclaw	10	11
Lodz	10	3
Gdansk	7	4
Szczecin	4	2
Other	68	15
Total	270	87

Certified buildings,
Colliers International, 2016

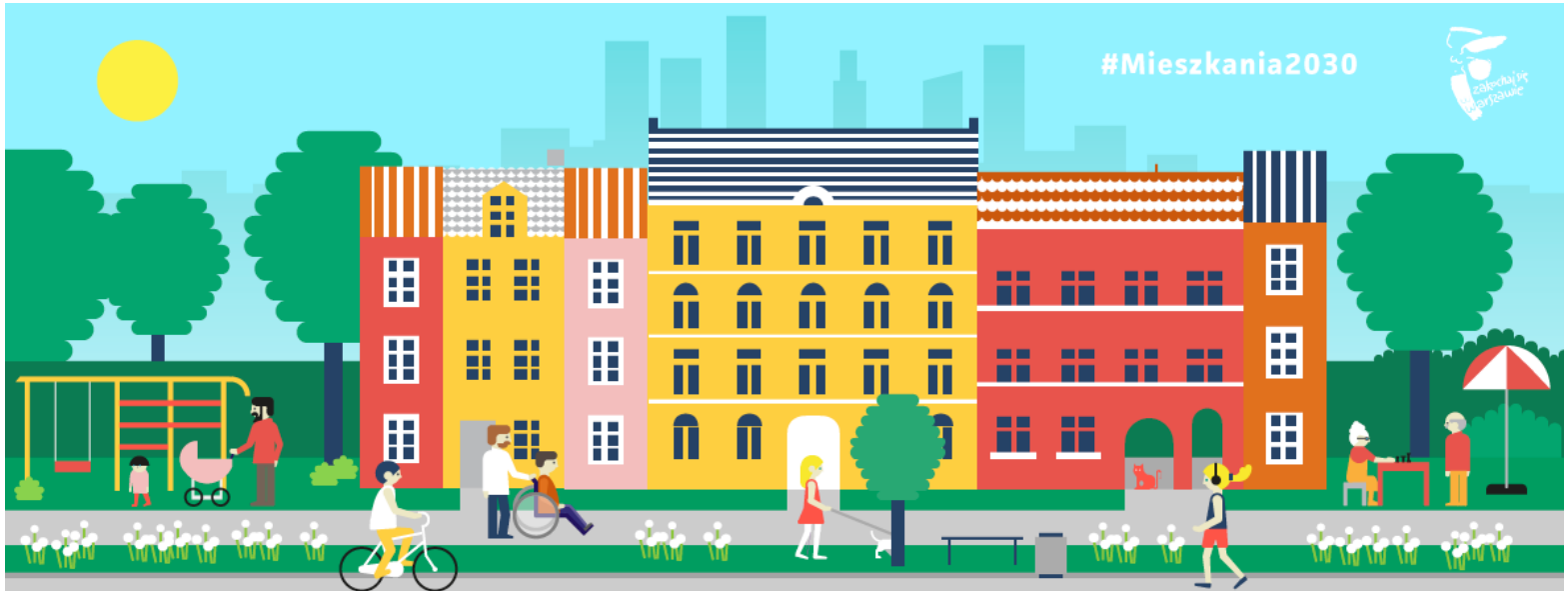


New Warsaw housing policy until 2030

- It is planned to be adopted by the City Council this year.
- This document sets the direction of housing policy in Warsaw in following years.

Goal of the housing policy:

Improving the quality of living conditions of all of the Warsaw residents



Warsaw Housing Standard

The component of the new housing policy

The idea taken from multi-criterial systems of certification (LEED, BREEAM)

Guidelines for building new and modernizing existing buildings and estates

Public and private buildings

Works on the Standard in 3 thematic groups:

URBAN AND SPATIAL

TECHNICAL AND CONSTRUCTION

SOCIAL

Warsaw Housing Standard – next steps

Assessment of :

- existing building efficiency standards in terms of possibility of implementing their guidelines in Warsaw Housing Standard
- existing sustainable districts and efficient buildings.

Adoption of Warsaw Housing Standard in the resolution on Warsaw Housing 2030 Programme

Adoption of the executive order obliging city units to implement Warsaw Housing Standard during construction and modernization works.

Conducting trainings/meetings for the representatives of the city units in the scope of implementation of the Standard.

Warsaw Social District – newly planned residential area with different kinds of buildings – social, built by housing associations, buildings with flats for commercial rental. This project will take into account measures on energy efficiency, water management and impact on climate.

Revitalization programme for Prague District in years 2015-2022

- Housing policy is the largest part of the Programme.
- 1423 ha - 2,75% Warsaw area
- 129 838 inhabitants - 7,53% of Warsaw inhabitants
- 3 districts – Prague-North, Prague-South, Targówek
- The state of housing and energy solutions in the area requires huge improvements.
- **Construction of new blocks of flats (1600 appartments) and renovation of old ones (3000 appartments) with total investments equal to € 130 million.**
- **5 000 flats to be connected to district heating - € 17 million**
- **Integrative planning solutions and smart cities solutions**.

Energy efficient buildings

According to the Directive on the energy performance of buildings after 2018 all new constructed public buildings will have to be built as „nearly zero-energy”

Leading role of the public sector in the implementation of policies and actions that will stimulate the transformation of buildings to the level of „nearly zero-energy” is crucial

“Analysis of energy efficiency of selected public educational buildings”

Outcome: assessment of possible savings thanks to thermal retrofitting to the standard of 2018 “nearly zero-energy” buildings:

use of energy:

85,7

GWh/year

CO_2 emissions:

280 00

tonnes/year

energy costs:

4,9

Euros/year

Smart energy consumers

The overall goal of the Step by Step project is to maximize the percentage of households of a neighborhood or small city that adopt energy saving behavior

April 2016 to September 16

Door-to-Door

3113 households joined the project
95% try actions they do not do before
100% of the participants have given contact details

October 2016 to November 2017

Coaching

81% of participants **- 2535 -** have been successfully contacted after DtD
64% HH **- 1992 -** have changed habits
3,6 missions accepted in average

Results

Examples of new habits

- Use less energy by installing LED bulbs
- Limit usage of water with
- Buy local fruits and vegetables
- Participate to the winter collective challenge

-8,5% of electricity consumption compared to a control group after 1 contact by door-to-door and 3 phone calls

Results validated by 2 research institutes

→ *Results on heating to be published*

→ *Update of results for the whole project duration*

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