Warsaw Energy
Use Sensibly!

fall in love with warsaw green

Warsaw energy efficiency and building retrofitting policies

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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

€ 4.21 billion
planned budget expenditures for 2018

1.9%
unemployment rate
6.6% - Poland

260 000 students
18% of students in Poland

1.375 million
registered vehicles
6.2% of registered vehicles in Poland

414 375
registered enterprises
17.7% of registered enterprises in Poland

30%
green space

#Warsaw2030
Warsaw's Development Strategy

Warsaw's Development Strategy is a vision of the city's development to be realized in the upcoming years.
It is the most important document for local authorities, because it helps us make crucial decisions.

Operational goal 2.1.

WE HAVE ACCESS TO WIDE OFFER OF HOUSING

- Support for the construction focused on rational management of natural resources
- Creation of housing policy with respect for environment

Operational goal 3.2.

WE LIVE IN CLEAN NATURAL ENVIRONMENT

- Reduction of pollution and GHG emission
- Support for RES and energy efficiency

Covenant of Mayors for Climate & Energy

Covenant of Mayors
for Climate & Energy

EU's targets possible to achieve only with cities involvement

7 755
signatories

252,6 m
inhabitants

2009

- **Warsaw joined Covenant of Mayors**

2011

- **Warsaw City Council adopted SEAP**

2018

- **Expresing support for CoM for Climate and Energy**

2018

- **New CO_2 emission reduction goals until 2030**

Key documents

SEAP

20% REDUCTION IN 2020

+ CO_2 EMISSION
+ ENERGY CONSUMPTION

NEW ENERGY EFFICIENT BUILDINGS

THERMAL RETROFITTING OF BUILDINGS

Low-emission Economy Plan

20% CO_2 AND ENERGY REDUCTION
+
AIR QUALITY

ACTIVITIES IN 3 MAIN AREAS:
ENERGY, TRANSPORT, GREENERY

REDUCTION OF EMISSIONS FROM BUILDINGS

Warsaw Housing Policy

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

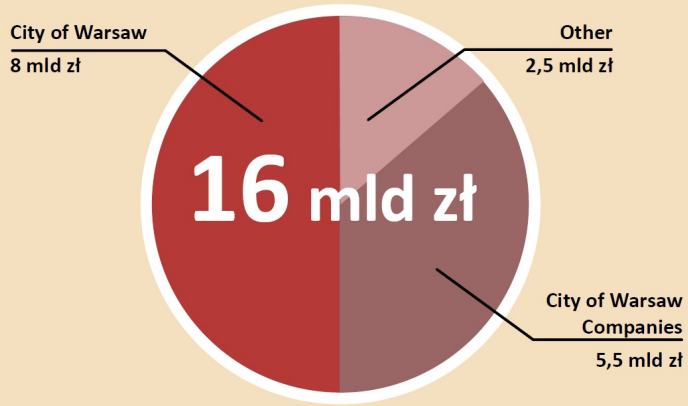
+ ENERGY EFFICIENCY
+ SUSTAINABLE MOBILITY
+ RATIONAL SPACE MANAGEMENT

WARSAW HOUSING STANDARD

Low-emission Economy Plan

Examples of investments to be implemented in 2015-2020

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

Monitoring of implementation of the Plan in 2015-2018

City of Warsaw and City companies

120 *investments*	**100** *mln Euro*
4 150 tonnes *CO_2 reduced*	**10 266 MWh** *energy saved*

EXAMPLES OF INVESTMENTS

- **21** electric buses
- **35** LNG buses
- Photovoltaics on buildings and buses
- **80** new trams with energy recovery
- New bike paths
- **40** buildings retrofitted
- Over **1500** grants for RES for Warsaw citizens

Green buildings in Warsaw

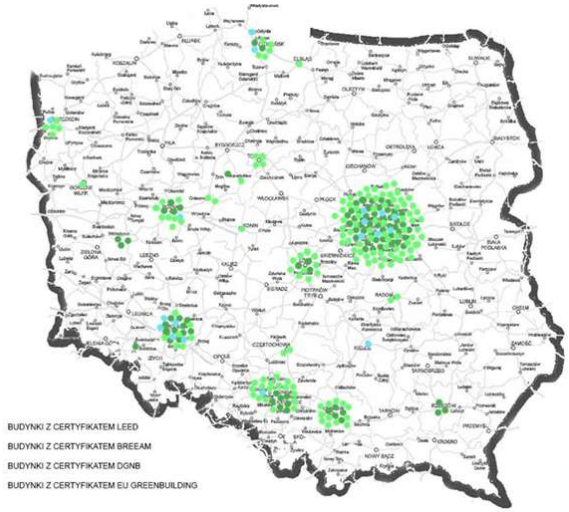
SEAP assumes thermal retrofitting of existing and building of new buildings:

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



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

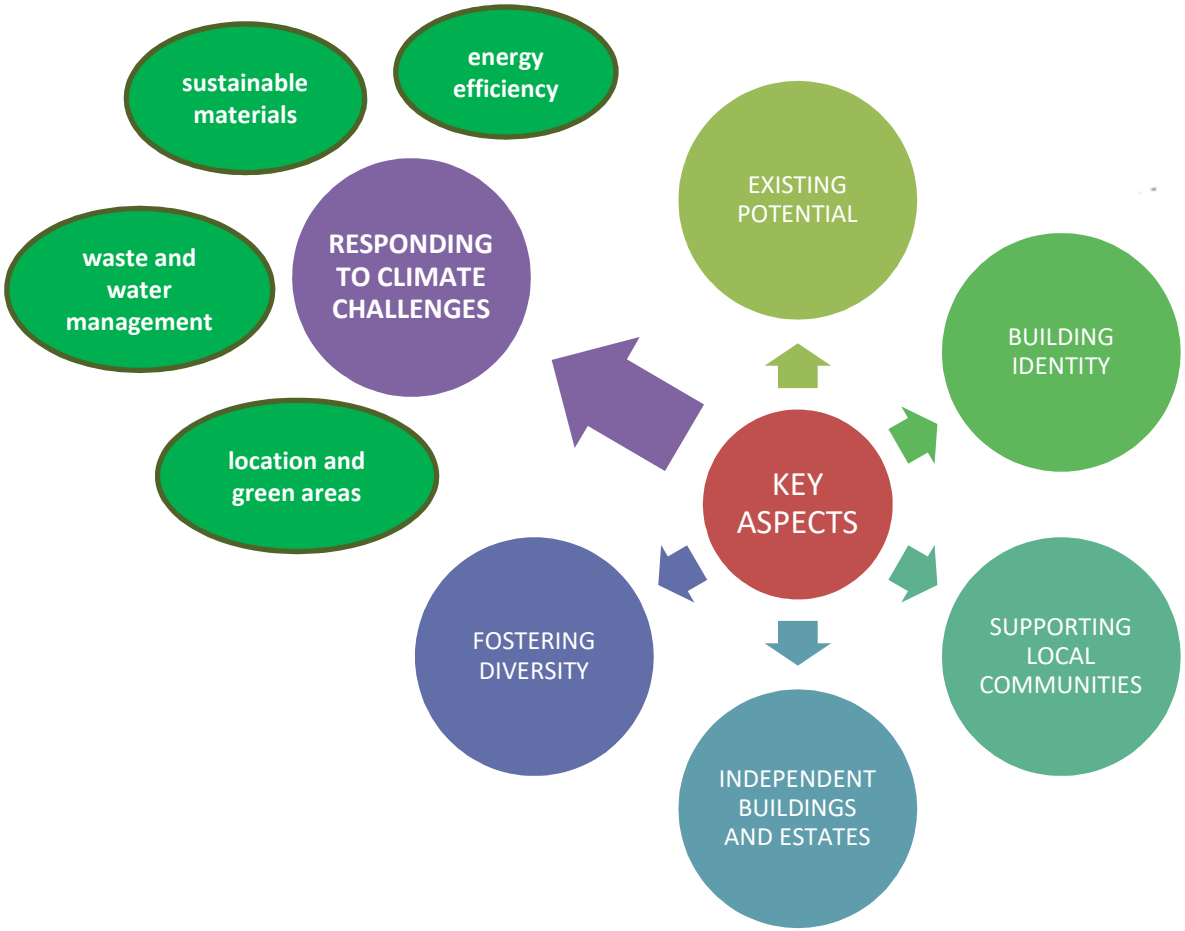
The basis for the standard is the idea of sustainable development:

ECOLOGY

ECONOMY

SOCIETY

Warsaw Housing Standard



Building Efficiency Accelerator (BEA)

BEA assists sub-national governments in speeding up the process of adoption of best-practice policies and implementation of building efficiency projects, with the goal of doubling the rate of energy efficiency improvement in building sector by 2030

Implement one enabling **policy**

Implement one demonstration **project**

Create a baseline, **track and report** annual progress, and **share experiences** with other governments

Policy

Project

Tracking & communication

Adoption of **Warsaw Housing Standard** – mandatory for public buildings in the City of Warsaw. It will be a good practice showing that it is possible to built energy efficient buildings – model for private investors.

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

City of Warsaw goals

Clean Energy Network

- To provide a platform for cities to define work streams, share their experiences and discuss priorities for technical assistance.
- Representatives of 18 cities, i.e. Bogota, Chicago, Montreal, Warsaw, Yokohama.
- **One of the topics:** Clean Energy in Municipal Buildings
- **Warsaw target:** Reduction of air pollution and in one step carbon footprint in private buildings/households by retroffiting boilers (50% less boilers by 2025) and reduce use of private cars (reduction of 25% until 2025).
- **Proposed network actions**
  1. Support for coordination of implementation of data collection model to prepare more or better tailored projects, including models for project monitoring;
  2. Support to find partners for consulting and expertise;
- **Cooperation with other cities on**
  1. Washington D.C.: ambitious energy retrofit and zero carbon building goals;
  2. Seoul: energy independence.

Energy efficiency projects examples

Monitoring of energy use and costs

- Schools, preschools, centers of culture, sport, social welfare, administrative buildings
- Number of monitored points:

electricity	**2 110**
heat	**775**
gas	**813**
number of buildings	2 057
number of locations	1 765

Actions:

- removing unnecessary measuring points
- appropriate selection of tariffs (194 change of tariffs)
- right selection of the ordered power
- introduction of Warsaw Purchasing Group
- analysis showing the problems to the managers and what is possible to improve

Effects:

- Less Energy used
- Better fitted tariffs
- 2,65 Euro saved in 2012-2016

Energy efficiency projects examples

Smart energy consumers – STEP BY STEP

April 2016 to September 16

Door-to-Door

3113 households joined the project
95% tried new actions
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 of the project

Examples of new habits

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

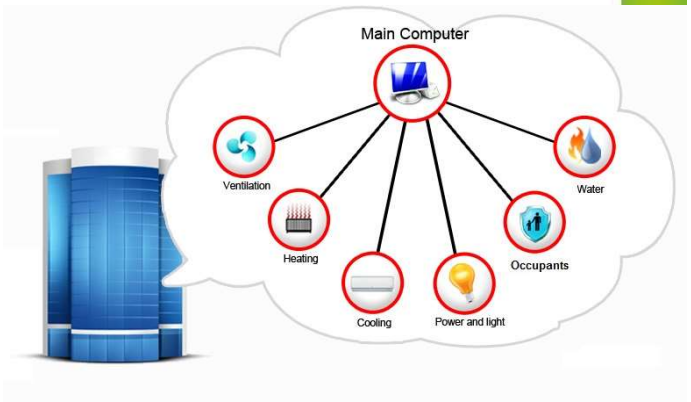
<u>Results validated by 2 research institutes</u>

→ *Results on heating to be published*

→ *Update of results for the whole project duration*

Energy efficiency projects examples

HIT2GAP – Highly innovative building control tools tackling the energy performance gap



The main idea of HIT2GAP is to develop a generic **open platform** where:

- Most equipment are interoperable and can communicate no matter the provider
- Data related to the building can be retrieved from wireless sensors
- Plug and play approach is used

PURPOSE

- better assesment of energy use within a building in order to minimize the performance gap between desing and operation of a building.

EFFECTS

Savings and energy use reduction due to:

- Light and HVAC systems monitoring,
- Prediction of energy use thus more benefitial energy contracts,
- Building optimum performance.

Moreover…

- CO_2 emission reduction,
- Better work comfort,
- Greater user awarness about energy conservation.

Warsaw Energy
Use Sensibly!

Thank you!

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