



SUSTAINABLE ENERGY
WEEK 24 - 28 JUNE 2013

EU SUSTAINABLE ENERGY WEEK 24-28 JUNE 2013



Marcin Wróblewski
27 June 2013



www.e-warsaw.pl

Financing sustainable energy projects in Warsaw – current and new approach



City of Warsaw

Main features of the capital city of Poland:

- ✓ administrative area: 517 km²
- ✓ inhabitants within this area: 1.7 million
- ✓ inhabitants within agglomeration: 3.3 million
- ✓ density of population: 3300 per km²
- ✓ number of students: 270 000
- ✓ registered enterprises: 300 000
- ✓ registered vehicles: 1.2 million
- ✓ budget expenditure for 2013: € 3.2 billion
- ✓ unemployment: >4%





Energy efficiency projects - financing

- Municipality's own budget and municipal bonds
- From external sources, e.g.:
 - ✓ National Fund for Environmental Protection and Water Management (Narodowy Fundusz Ochrony Środowiska i Gospodarki Wodnej - NFOŚiGW)
 - ✓ „Infrastructure and Environment” Operational Programme
 - ✓ Regional Operational Programmes
 - ✓ Green Investments Scheme (GIS)
 - ✓ European Regional Development Fund
 - ✓ 7th Framework Programme
 - ✓ Competitiveness and Innovation Framework Programme – CIP (including Intelligent Energy Europe Programme – IEE)





Covenant of Mayors



30 signatories from Poland

Warsaw

Starting implementation of Sustainable Energy Action Plan, which will require utilization of all available methods of financial montage

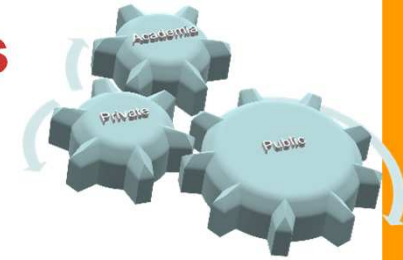
Goals of Warsaw's SEAP:

- introducing new solutions in transportation
- modernization of energy production and distribution
- implementation of renewable energy sources
- optimization of energy consumption and resource management
- making buildings more energy-efficient
- changing energy consumers behavior

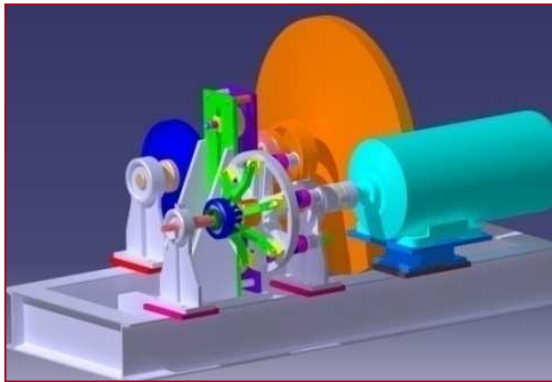




Warsaw selected projects and activities „E-Mobil” Cluster



- In order to institutionalize and coordinate actions on behalf of e-mobility and other environmental-friendly propulsions in the Warsaw area, we created the “E-Mobil” Cluster. Among its notable partners are e.g. Warsaw University of Technology, Car Transportation Institute, PIMOT Institute, Fiat Auto Poland/Iveco and energy company PGNiG
- The first „hard” project **„The modular design of ultra-light electric vehicle”** – is to develop construction of city vehicle for Warsaw municipal services and technology of its production. The application was sent to National Centre for Research and Development within Applied Research Programme (Polish national funding, without EU support)





Warsaw selected projects and activities

Low-Carbon Area and RES Laboratory

- Low-Carbon Area (in preparation) - following such world-leading projects as Stockholm's Hammersby district, we plan to create city area, which will feature solutions on behalf of energy efficiency, natural environment and low GHG emissions, both in the field of city planning, energy networks, buildings construction, transport, waste management, and water and wastewater management – with utilization of various sources of both municipal and external financing



- RES Laboratory (already operational) - educational centre in Middle School No. 142 in Targówek. The centre includes installations producing renewable energy: 8 solar collectors, 1 heat pump and 16 photovoltaic modules, which are available for students and visitors for lessons. Financing: Targówek district and Viessman company (sponsor).



Warsaw selected projects and activities

ZUSOK waste incineration plant and PPP projects

- Modernization and extension of ZUSOK municipal waste incineration plant was expected for a long time to be completed in formula of public-private partnership
- However, difficulties with this formula cause recent change of decision; ZUSOK has been incorporated in municipal MPO waste management company, which will utilize for modernization and extension projects commercial financing and possibly preferential credits (JESSICA and ELENA financial instruments – available for public commercial projects on energy efficiency)



- The extended ZUSOK will allow for incineration of around 50% of Warsaw waste in 2018
- Together with the second waste incineration plant planned for later Warsaw can have 8% share of renewable energy from waste around 2020



Warsaw selected projects and activities



- The Operational Programme „Infrastructure and Environment”, which distributes assistance received by Poland from the EU Cohesion Fund, is the main source of co-financing transport projects in Warsaw, including **purchase of 186 modern trams** with recovering energy from braking for 375 million euro, or **construction of central stage of second underground line** (total value - 1 billion euro).



- While as to **thermal retrofits of buildings**, they are most often conducted from own funds of citizens, housing cooperatives or the city (which have costs partially refunded from national scheme operated by Bank Gospodarstwa Krajowego), or with assistance from Narodowy Fundusz Ochrony Środowiska i Gospodarki Wodnej (operating both national and EU funds), which distributes as well assistance for **installing renewable energy sources**.



Warsaw selected EU projects „Czajka” Wastewater Treatment Plant

- 30 January 2008 – signing of contract for the extension of the Czajka WWTP (sewage section and preparation of sludge for disposal) – to be completed in 2013. Contract's main subject are high-tech wastewater treatment lines; also additional elements like sludge thermal incineration plant, which will provide the Czajka with heat and energy.
- Total value without accompanying investments – 719 million euro: the largest current investment in Europe in the field of environmental protection, which will ensure treatment of 100% wastewater from the Warsaw area and will reduce amount of connected nitrogen released via Vistula River to the Baltic Sea by 58%, while in case of phosphorus – by 60%.
- External co-financing started already from pre-accession funds, completed from the Operational Programme „Infrastructure and Environment”.





Warsaw selected EU projects



ICE-WISH

- Co-financed from Competitiveness and Innovation Framework Programme,
- Main objectives: comprehensive, integrated control and management system of media consumption in buildings, in particular in social housing
- Partners: 10 European cities and experts

The screenshot displays the ICE-WISH interface on a television. The interface is divided into several sections:

- Navigation:** ICE WISH logo, My Home, Advice, Statistics, Settings.
- Electricity:** Lightbulb icon, kWh: 10,00, €: 3,54.
- Water:** Showerhead icon, M³: 36,06, €: 19,04.
- Heating:** Radiator icon, kWh: 86,08, €: 32,20.
- Spending:** Coin icon, Estimate: € 54,98.
- Footer:** 65% (with house icon), CO₂ 545 ppm (with house icon), 21° C (with house icon), 6° C (with tree icon).

On the right, an elderly woman is sitting on a red chair, holding a remote control and watching the television. The television screen shows the same ICE-WISH interface.



Warsaw selected EU projects

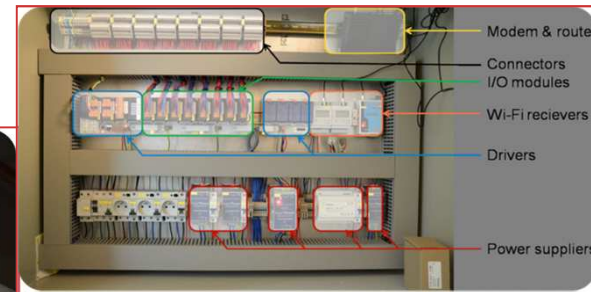


E3SoHo

- Competitiveness and Innovation Framework Programme
- Holistic solutions for ICT-enabled energy efficient social housing developments in 3 cities: Warsaw, Genoa, Saragossa



Detectors in flats



Meters



Weather station



Pad



Warsaw selected EU projects



OPEN HOUSE (7th Framework Programme)

- The created methodology is comprehensive, covering stages from designing the building until its demolition and taking into account social and economic indicators as well
- Right now the methodology completed and tested on in more than 60 case studies throughout Europe, including 2 in Warsaw
- <http://www.openhouse-fp7.eu>
- <http://openhouse.building-21.net>





Warsaw selected EU projects



Cities on power (European Regional Development Fund)

Main objectives:

- preparation of policies and strategies aimed at increasing renewable energy use in urban areas,
- a framework to encourage investment in renewable energy in these areas.

Partners from 4 countries: Poland, Austria, Germany and Italy

City of Warsaw – project leader



EUROPEAN UNION
EUROPEAN REGIONAL
DEVELOPMENT FUND



Warsaw selected EU projects



Renewable energy sources and cogeneration in Warsaw

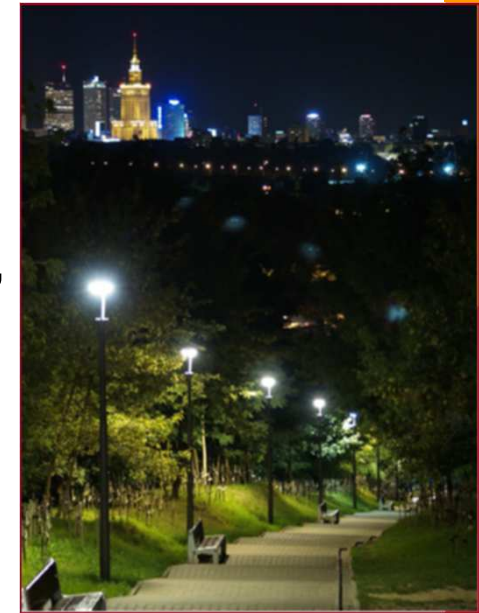
- Project co-financed from the ERDF within the Activity 4.3. *Air protection, energy sector* of the Regional Operational Programme for Mazovian Voivodship 2007-2013
- Implementing the RES (solar and geothermal energy) and cogeneration in the selected objects in Warsaw:
 - 2 school buildings in the Śródmieście (Downtown) District – installation of the solar collectors and heat pumps
 - 1 school and 1 nursery building in the Białołęka District – installation of the solar collectors
 - Cogeneration in the Gynaecology and Obstetrics Hospital in Warsaw



Approach for future

Modernization of street lighting in PPP/EPC formula

- ✓ Modernization of street outdoor lighting
 - 114 000 existing light points (32 000 of them in need of modernization: 5 000 – full, while 27 000 - partial modernization),
 - reduction of installed capacity by 5.3 MW (now 22.7 MW),
 - reduction of energy consumption by 22.2 GWh annually (now 95.1 GWh),
 - 57% reduction of energy cost for modernized lamps,
 - reduction of CO₂ emission by about 20 000 tonnes per year.



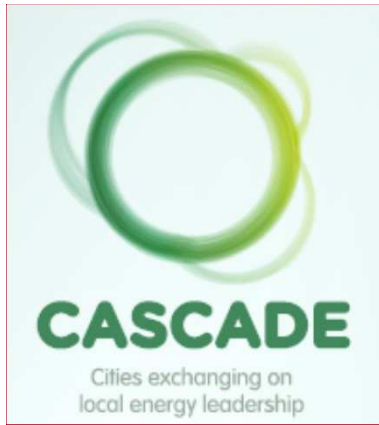


Approach for future



Utilization of selected financial instruments and partnerships

- ✓ PPP formula shall be used also in other projects, like construction of underground parking garages with infrastructure for charging electric vehicles;
- ✓ NFOŚiGW – next editions/changed versions of its financial instruments like:
 - SOWA – energy efficient street lighting,
 - new instrument replacing GAZELA (low-emission urban transport),
 - next edition of GEKON (possible to utilize for Warsaw low-carbon area if cities accepted as beneficiaries);
- ✓ EU instruments for next financial perspective 2014-2020:
 - Horizon 2020, European Innovation Partnership,
 - instruments implemented on both national and regional basis (operational programmes, territorial contracts, integrated territorial investments).



Thank You

Marcin Wróblewski

Infrastructure Department
of Warsaw City Hall

mwroblewski@um.warszawa.pl



www.e-warsaw.pl