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Energy efficient rehabilitation – improvement of buildings and energy supply infrastructure

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June 2010, Warsaw, WP4 workshop

WP4 activities, *(TA-Jelgava city centre)*

Activities	Status (not started yet, just started, working on, almost finished, finished)	Description
<u>Activity 1 - Seminar in Jelgava</u> (September 16-17, 2009)	Finished	<p>Project partners discussed different topics: National vision and EU activities related to energo-efficiency in Latvia, Experience of Riga in implementation of energo-efficiency projects, Establishment of Zemgale Regional Energy Agency etc.</p> <p>Participants were involved in moderated Workshops:</p> <ol style="list-style-type: none"> 1. Energy efficiency of heating supply systems; 2. District heating and cogeneration; 3. Innovative technologies in heating supply systems.

WP4 activities, *(TA-Jelgava city centre)*

Activities	Status (not started yet, just started, working on, almost finished, finished)	Description
<u>Activity 2 -</u> Elaboration of concept for improvement of energy efficiency of building stock in Jelgava	Just started ³	Project Management Group is working on procurement documentation. Tender will be launched in July, 2010.

WP4 activities, *(TA-Jelgava city centre)*

Activities	Status (not started yet, just started, working on, almost finished, finished)	Description
<u>Activity 3 -</u> Elaboration of standard technical projects for renovation of multi-storey residential building stock and adaptation for Jelgava TA	Just started	Project Management Group is working on procurement documentation. Tender will be launched in July, 2010.

Residential buildings, *Jelgava, PP13*

Number of multi-apartment buildings	115 multi apartment buildings in Jelgava TA
Number of apartments	6857 apartments in Jelgava TA
Total living and heating space, m²	Total living space - 343 878 m ² Total heating space - 334 964 m ²
The average living and heating space per apartment, m²	Average living space per apartment - 50.1 m ² Average heating space per apartment - 48.85 m ²
Share of owners / tenants	Almost 98% of apartments are privately owned

Residential buildings, Jelgava, PP13

- **Typical building types –**

- Series 316, 318: main building structure - brick, roof construction - span roof, roof covering material - asbestos cement plates;
- Series 103 – prefab buildings with brick main partition walls - roof construction - flat roof, roof covering material – asbestos cement plates;
- Series 104 - prefab buildings ; roof construction - flat roof, roof covering material - asbestos cement plates;
- Individual projects are used in construction of other buildings.



Residential buildings, Jelgava, PP13

	Series 316	Series 318	Series 104	Series 103	Special projects	Total
Number of buildings	35 multi-apartment buildings	16 multi-apartment buildings	5 multi-apartment buildings	17 multi-apartment buildings	41 multi-apartment buildings	114 multi-apartment buildings



Residential buildings, *Jelgava, PP13*

- The average annual energy consumption of multi-apartment buildings (kWh/m²)

Total heat consumption	395 MWh per one building annually
Space heating	~ 135 kWh/m ²
Hot water preparation	~ 52.88 kWh/m ²
Electricity	No data

Residential buildings, Jelgava, PP13

- Tariffs and costs:

	Tariff	Average annual costs per m ²
Heat	Heat for households – 43.49 LVL/MWh	1.23 LVL/m² or 1.75 EUR /m²
Electricity	Electricity for households – 20.6 Ls/GJ or 74.2 LVL/MWh Electricity for industry – 21.3 Ls/GJ or 76.6 LVL/MWh	<i>No data</i>

Residential buildings, Jelgava PP13

- **The energy saving potential (kWh/m²/a, %):**
 - After renovation would give ~ 50 % savings;
 - After renovation would give ~54% CO₂ emission reduction.



Public buildings, *Jelgava PP13*

- **Concepts and experience of public building refurbishment:**
 - In 2010 energy efficiency raising activities have been started in 7 public buildings owned by municipality , attracted co-financing of Climate Change Financial Instrument - 2.5 million EUR
 - Planned savings of thermal energy consumption after energy efficiency activities ~ 50% ;
 - 5 years after project implementation monitoring of building energy efficiency will be performed to test planned thermal energy consumption and CO2 emission reduction



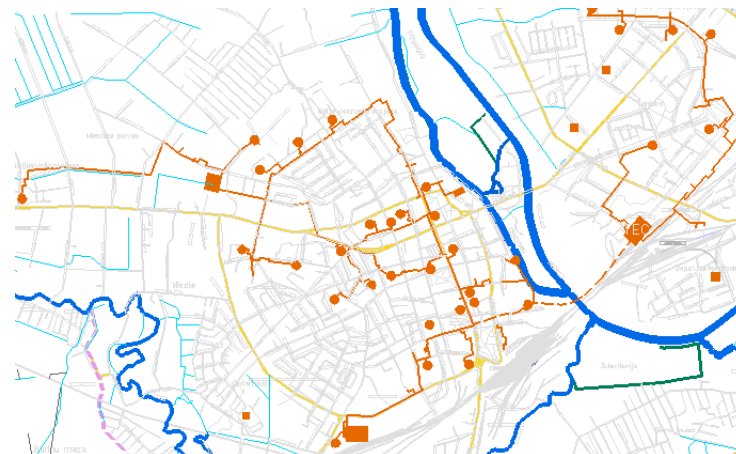
Energy supply, Jelgava PP13

- **The heat producers and suppliers:**

- Ltd.” Fortum Jelgava”
- on February 7, 2008 Ltd. “Fortum Jelgava “signed an agreement to acquire 100 % of shares in Ltd.”Jelgavas Koģenerācija” in Latvia.

- **The energy supply infrastructure:**

- Total length of JDHS (Jelgava district heating system) – 70 km



- By 2012 it is planned to built a cogeneration boiler house, where biomass will be used

Energy supply, Jelgava PP13

- **Energy sources:**
 - heat is produced in natural gas-fuelled heating plants.
- **Cogeneration:**
 - in 2009 a cogeneration station was launched at the boiling house (Ganību street) managed by Ltd. "Fortum Jelgava". In the station there are 4 engines ,with connected electric generators, operated by natural gas. Total electric power will be 3,966 MW. Ltd. "Fortum Jelgava" plans to realize the electric energy produced in cogeneration process to JSC "Latvenergo".
 - By 2012 it is planned to built cogeneration boiler house, where biomass will be used
- **Renewable Energy Sources**
 - Use of renewable energy sources as fuel , location of sun butteries to produce hot water



Stakeholders, Jelgava PP13

- **The stakeholders involved in Urb.Energy project:**
 - Municipal building management company “Jelgavas Nekustamā īpašuma pārvalde”
 - Heating company Ltd. “Fortum Jelgava”
 - Apartment owners and inhabitants
- **The special demand:**
 - In cooperation with the municipal building management company “Jelgavas Nekustamā īpašuma pārvalde” seminars are organized for house monitors , to present them documentation of building technical evaluation prepared in the framework of the Urb.Energy project as well as to rouse inhabitants’ understanding about technical problems in buildings and stimulate them to attract financing from ERDF for insulation of buildings.

Current results, *Jelgava PP13*

- **The first results:**

- Elaborated Concept for improvement of energy efficiency of building stock in Jelgava;
- Elaborated standard technical projects for renovation of multi-storey residential building stock and adaptation for Jelgava TA.

- **Urgent Problems:**

- Bad technical condition of multi storey apartment buildings;
- Insufficient knowledge about necessity to perform full renovation of buildings;
- Low inhabitants' paying capacity and mistrust to loans.

THANK YOU FOR YOUR ATTENTION!