PROPOSED TOPICS FOR THE CONFERENCE
"BETTER CITIES FOR BETTER LIFE"

1. THE FORMATION OF THE MAIN ENERGY SECTOR HUB OF VILNIUS CITY

The Energy Sector Hub, i.e. heat and electricity generating devices are being concentrated in a territory on Jočionių g. 13. The Vilnius city Energy Sector Hub will include the largest power plant TE-3 operating in Vilnius city, a planned waste sorting plant and a waste incineration plant. Furthermore, Vilnius cleaning and sludge treatment facilities are situated nearby.

Heat production in Vilnius city. The consumption of district heating in Vilnius city comprises around 2913 GWh per year, or 80% of the total heat demand. Around 13% of the heat demand is produced by combusting biofuel, around 77% – natural gas, and around 10% – fuel oil reserves. Natural gas is used to produce energy for non-district heating.

Mechanical biological treatment facilities and the regional municipal waste incineration plant are planned to be operational in 2015. Around 70% of Vilnius region waste will be treated in the mechanical biological treatment facilities. The facilities are capable of treating 250,000 tonnes of municipal waste. The efficiency of a facility per day is 840 tonnes. Around 50%–60% of the municipal waste processed in facilities by a mechanical biological method (around 160,000 tonnes per year) will be delivered to the municipal waste incineration plant, 10%–15% (or around 50,000 tonnes) will be recycled and only 5%–10% of waste will be delivered to the landfill site.

Vilnius sludge treatment facilities. The first thermal hydrolysis (high pressure and temperature) sludge treatment system in the Baltic countries was put into operation in July 2012. The biogas that is formed in the sludge treatment facilities is used for the production of electricity and heat. The two power plants of 1MW capacity produce around 16 GWh of electricity and 19 GWh of heat energy from biogas. Heat and electricity produced from biogas is used for the technological work processes of sewage treatment plants. The regional municipality waste incineration plant will treat 15,000 tonnes of treated sludge per year.

It is planned to incinerate 161,000 tonnes of waste and produce 20% of district heating demand (455 GWh heat) per year in the **regional municipal waste incineration plant.** By 2020, it is planned to upgrade the heat production devices of Vilnius city by adapting them to use biofuel. The provided fuel balance will be as follows: 70% of biomass and 30% of natural gas.

Having implemented these projects of the Energy Sector Hub, there will be a 25% decrease in 14321 CO2e emissions from these sectors by 2020, compared to 2003.

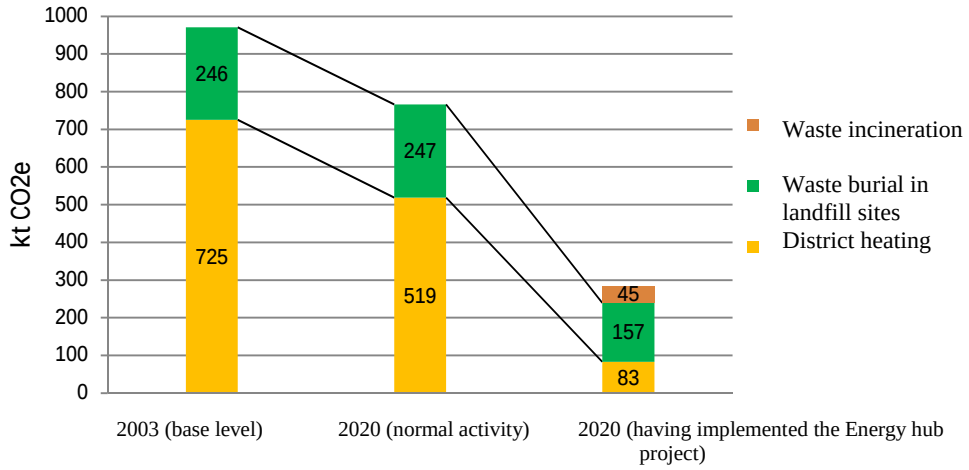

Fig. 1 Comparison of HECG (ŠESD) emissions with the basic emissions in 2003 and 2020 subject to different scenarios

2. INCREASE OF HEAT CONSUMPTION EFFICIENCY

In Vilnius there are 2,800 residential multi-apartment buildings that should be renovated, each with an average total area of 3000 m². Ninety-six residential multi-apartment buildings were renovated in Vilnius between 2004 and 2012. It is planned to renovate a further 240 residential buildings by 2016. In total it is planned to renovate around 600 buildings by 2020 and this would constitute around 30% of the total number of buildings to be renovated.

Having implemented the building renovation plans by 2020, 14321 CO2e emissions will be reduced.

The interactive map of the Actual Energy Consumption Class is a tool to stimulate the population to consume heat energy effectively. The interactive map of actual energy consumption of residential multi-apartment buildings was introduced to the citizens of Vilnius city in 2013, when the analysis of heat consumption of buildings and recommendations were provided to citizens.

This interactive map is a great tool to compare how much heat a building consumes during different heating seasons, to compare data with residential multi-apartment buildings in the neighbourhood and become familiar with recommendations – what the residents of the building should do in order to lower heating expenses.

The analysis is provided on the interactive map of Vilnius City Municipality, by choosing to display the actual energy consumption in residential buildings. There is also a link to the map on the left side of the Vilnius City Municipality website www.vilnius.lt.

This map provides information on 4,799 heat units according to the actual energy consumption in a residential building and which class the residential multi-apartment building belongs to according to this. There are in total 15 actual energy consumption classes which are grouped into 6 categories by colour on the map: good, average, bad, very bad, especially bad and renovated buildings.

Of all the provided heat units 349 residential buildings fall into the good class (93 of them are renovated), 1,104 – into the average class, 2,715 – into the bad class, 512 – into the very bad class, and 119 – into the especially bad class.

Citizens can find their multi-apartment buildings by address. Information regarding which class it belongs to, the year of construction, the type of building, the supervisor of the building, which class it belonged to during the heating seasons of 2011-2012 and 2012-2013 according to its actual heat consumption and what actions are recommended by the Vilnius City Municipality to be undertaken are displayed next to it.

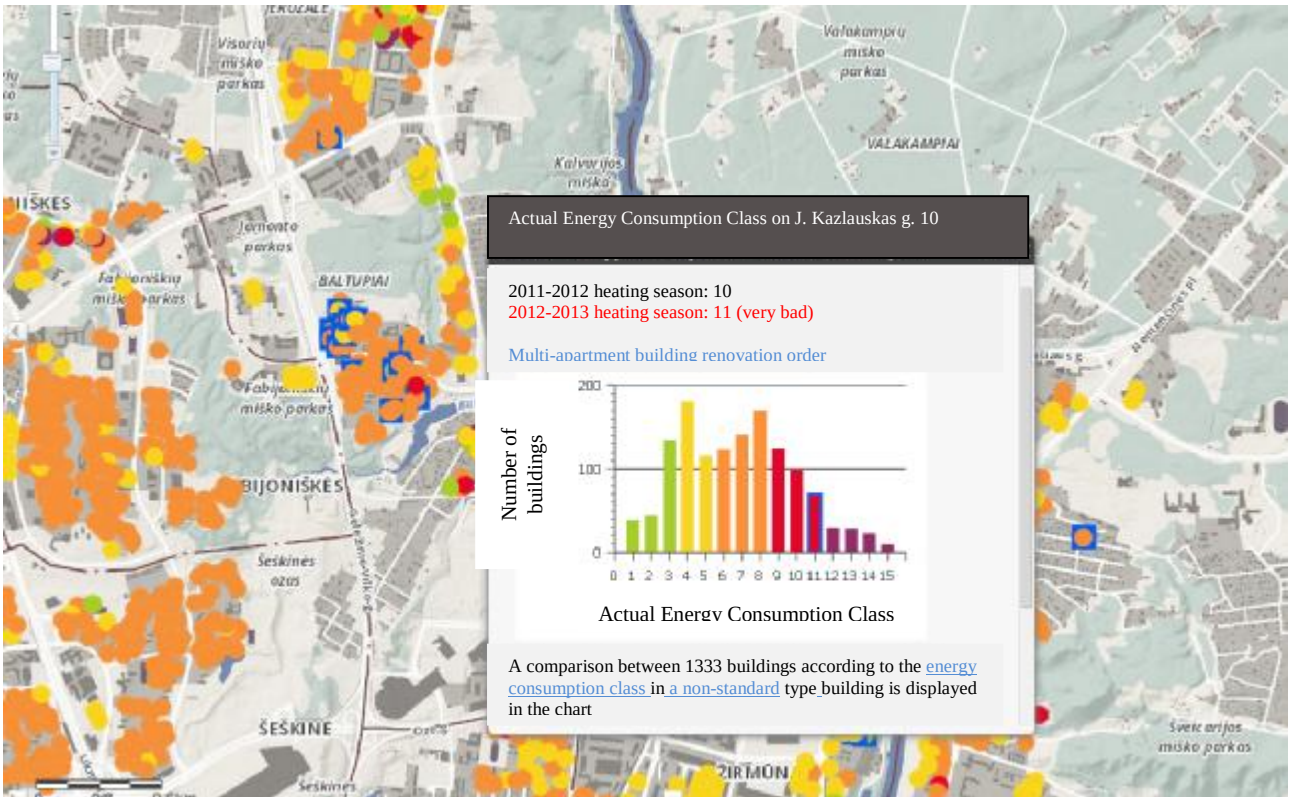

Fig. 2 Interactive map showing actual energy consumption class of Vilnius city