

## Sustainable district heating system in Kaunas

### Goals:

- Transfer from 96% of natural gas in 2010 to sustainable district heating using 100% RES (biomass, solar energy, municipal waste);
- Achieving social and economic benefits via reduction of heating tariffs, activating local biomass (mainly forest cutting waste) producers;
- Achieving environmental benefits via reduction of GHG emissions due to replacement of fossil fuel (mainly natural gas).



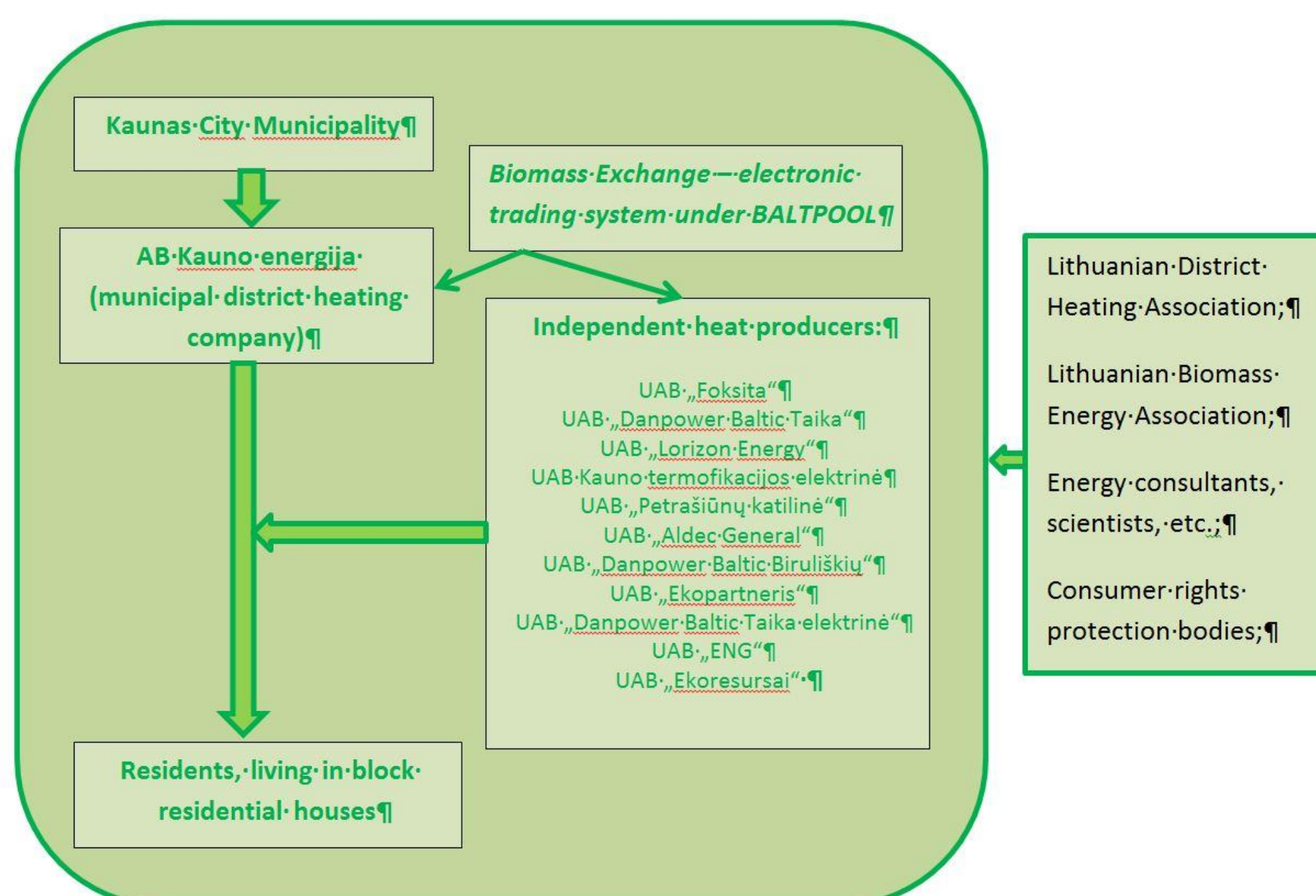
Figure 1. The range of implemented biomass projects in Kaunas

## Co-operation links with stakeholders

Internal and external stakeholders:

Internal – Municipality, fuel suppliers, heat producers and consumers;

External – Professional associations, consultants, consumers' rights bodies.



## Stakeholder involvement

### Problems and recommendations to solve conflicts:

- Limited technical conditions for integration of independent heat producers using RES into DH systems ;
- Complicated adjustment of DH system for operation with several independent producers;
- Constant debates between heat supplier and independent producers due to imperfect legislation.

Heat accumulation with storage tanks	All producers operate at basic mode Excess heat is accumulated in storage tank – requires additional investment. Changes in legislation regarding basic, peak and excess energy costs.
Use of natural gas sources	Does not require investment. Needs clear regulation on reservation of certain share of heat from natural gas.
Introduction of CHP of high efficiency and respective capacity (appr. 80 MW <sub>th</sub> )	Transfer of the experience of small towns not always applicable for large cities. Introduction of large CHP would enable more simple operation of DH system and stability of it's parameters.

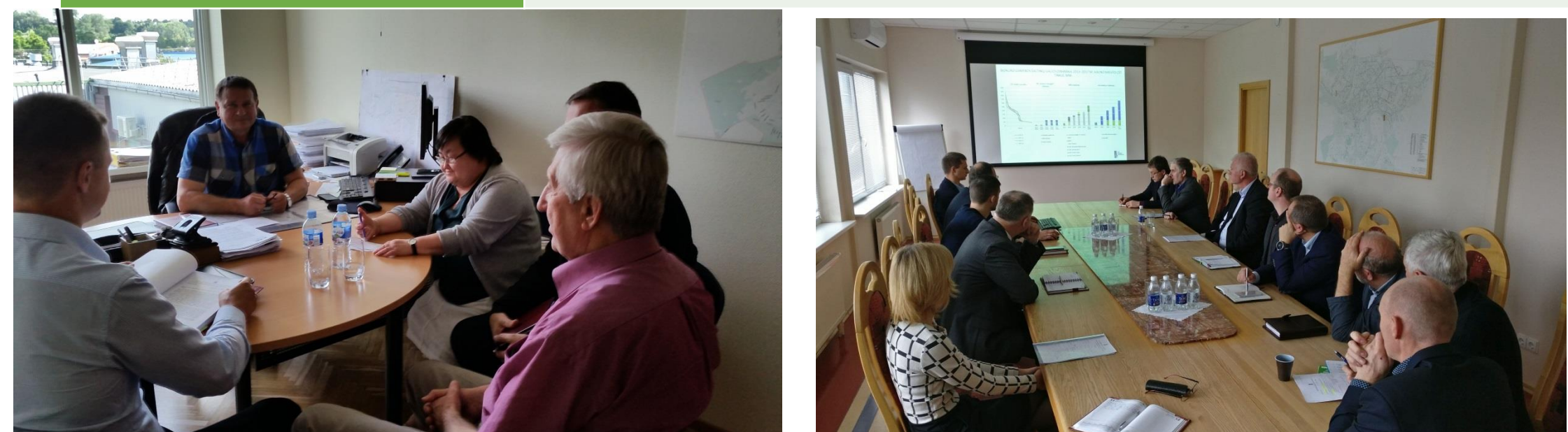


Figure 2. Stakeholders meetings

Main conflicts usually occur with residents living around the boiler-house, however, they are usually solved using soothing solutions:

- Presentation and discussions on EIA (environment impact assessment);
- Improvement of the living area and surroundings;
- Fixing transportation hours for biomass suppliers to avoid noise in night time;

### Lessons learnt:

Though some conflicts (with population) are easy to solve via discussion and some positive actions, others (with partners – independent producers) are much more complicated;

Planning based on clear criteria should be introduced to avoid „chaotic“ development;

Introducing new legal environment to heat producers solves some generation problems, but there are still conflicts in the activities of heat supply, which should be solved via discussions with authorities and among stakeholders.

## Contacts

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