Energy Efficiency Task Force Meeting in Geneva, 21-22 September 2008

NALAS gathered energy experts, municipal officials and university professors in Geneva to discuss energy challenges and plan for activities in response to some of those challenges. The meeting took place on the 20th and 21st of September 2008 and extended a visit to the United Nations office in Geneva to meet with the United Nations Economic Commission for Europe[1].

Energy issues are high on the agendas of the policymakers, governments and international organizations. On 23 of January 2008, the European Commission presented Energy Package[2] setting three objectives to be reached by the year 2020: 20% cut in CO2 emissions, 20% reduction in energy consumption and 20% of consumed energy to be from renewable energy. During its 15th Plenary Session, the Congress of Local and Regional Authorities adopted the Recommendation 243[3] and Resolution 262[4] titled "Public local and regional action: for a new energy culture". Numerous conferences focused on the energy issues, most importantly on the climate change and energy efficiency.

The energy challenges in the South-East Europe are not much different than in the rest of Europe. However, South-East Europe also suffers from severe economic and environmental problems caused by the inefficient and polluting energy systems in place. The biggest energy challenges in South-East Europe identified at the first task force meeting are:

1. Current Legal framework is incomplete and partially contradictory;
2. Existing laws are not being implemented and many by-laws are missing;
3. Local energy strategies or plans are missing; there is no baseline data on current energy consumption;
4. Municipal district heating companies are overstaffed and undercapitalized;
5. Energy prices are normally subsidized;
6. Collection rates are unsatisfactory;
7. Air pollution from energy production is significantly above EU-standards;
8. Use of Renewable Energies is minimal;
9. Public awareness is low, specifically concerning the economic and environmental dimensions of energy efficiency;
10. Scientific capacity and expertise, which could be addressing the above deficits, is missing – especially regarding the legal and economic dimensions.

Confirming the energy challenges identified at the first meeting of the NALAS Task Force on Energy Efficiency in Prishtina, various specific problems were described, together with possible actions that address them. It was

[1] UNECE, http://www.unece.org/
[2] EC Energy Package, http://ec.europa.eu/energy/energy_policy/
[3] Recommendation 243, http://www.nalas.eu/publications/EnergyEfficiency/REC-243-2008-New-energy-culture_en.pdf
[4] Resolution 262, http://www.nalas.eu/publications/EnergyEfficiency/RES-262-2008-New-energy-culture_en.pdf

identified that most energy challenges for the local authorities fall into three areas: heating, transportation and lighting. This is in accordance with the fact that over 75% of the energy is consumed in towns and cities and, in particular, about 40% of the energy is consumed in buildings and 30% on transport.

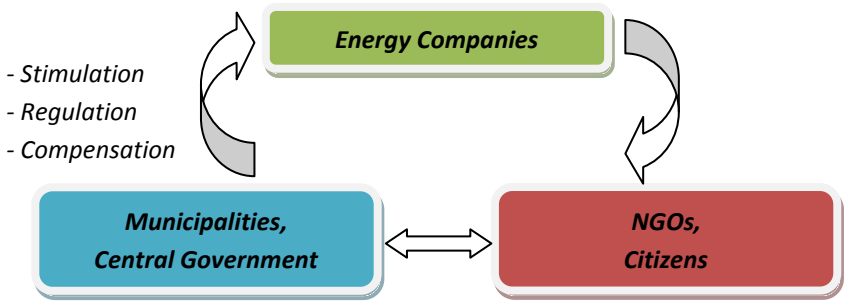
Heating of the public buildings is a complicated issue for the local authorities because its efficiency depends on many factors. Old buildings with poor insulation introduce a significant energy loss which must be addressed together with the modernization of the heating system before energy efficiency can be achieved. School buildings and hospitals are a particular challenge because they are big energy consumers and are often insufficiently insulated. Implementation of innovative energy solutions can reduce the energy consumption and reduce the environmental damage. In schools, it can also be used to raise the awareness among the children and their parents. Renewable energies, especially geo-thermal energy can provide heating and/or cooling for a whole district, so modernization of the system is certainly worthwhile.

Public transport is also an important challenge for the local authorities. In cities where no or poor public transport exists, citizens have no other option but to use their cars. This adds up to many tons of CO2, noise pollution, traffic jams and, taken to extremes, becomes a poor and very unpleasant way of transport. On the other hand, success stories like the Istanbul Metrobus project prove that proper organization of the public transport can improve the living conditions of the affected citizens by reducing the need for transport by car, reducing the noise and the emissions of CO2, while still providing reliable, efficient and quick transportation. Trams, innovative electric vehicles, clear cycling paths and municipal bicycle renting scheme can all contribute towards reaching a good transportation system.

***Istanbul Metrobus Project** will reduce 38,000 tons of CO2 annually*

Street lighting is just as important for enabling safe transportation. Implementation of an energy efficient street lighting brings clear benefit and return of the investment usually in as little as three to four years. Since it has been recognized as safe and straightforward, it is easier to find investment for lighting projects, especially when they include indoor lighting for public buildings, such as schools and hospitals.

Unfortunately, the energy challenges do not stop with the streets and public buildings. As the private sector is the main energy consumer, local, regional and central authorities also have a responsibility to mitigate the energy challenges it is facing. Local, regional and central authorities must play a major role in setting **energy policies** focused mainly to energy efficiency, energy savings, improved energy output and renewable energy.



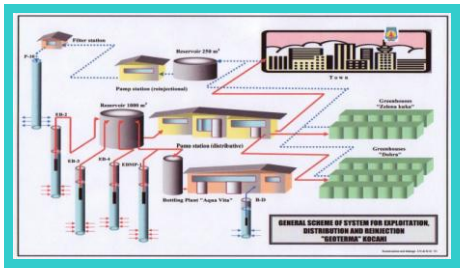
***Role of local and regional authorities** and central government in mitigation of energy challenges*

In order to play an active role, local authorities need to show sufficient **capacity** and **expertise** in addressing the energy issues. This capacity must be on both the technical and legislation levels – to understand the issues, discuss possible actions with the stakeholders and provide appropriate policies that address the issues. It is, therefore, crucial that proper **training** is delivered to the right municipal employees.

Innovative Energy Practices

The gathering of municipal energy managers, energy professionals and university professors enabled a uniquely fruitful discussion on various approaches and success stories on innovative use (or, rather, conservation) of energy in this region.

In Kočani, the Communal Public Enterprise has built a **geothermal system** used to heat green houses and some private and industrial users. The Kočani geothermal region with the aquifer "Podlog – Banja" is considered as one of the regions with the highest geothermal gradient in Europe and is situated in the North-Eastern part of the Republic of Macedonia. The valley, with its surrounding, represents an area of 400 km2, 300 m above sea level. With the economical, cultural and political life flourishing in the city centre of Kočani (30.000 citizens), the aquifer provides a vast variety of methods for exploitation. The "Geotherma" system includes 4 wells, connected to the system with a total capacity of 300 L/sec, a pump station with collecting tank of 1000 m3 and an automated control and monitoring system. It is connected to the agriculture complex ZIK "Dobra" and ZZ "Zelena Luka" and has completed the first phase of a re-injecting system.

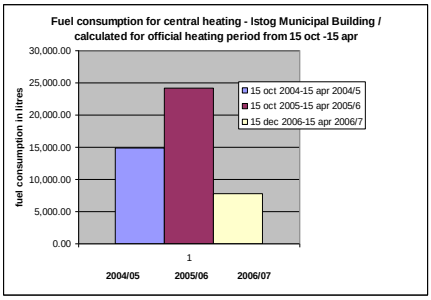


***Geothermal system** in Kocani*

In the Istanbul Metropolitan Municipality, the **energy efficient street lighting** has saved 16 million kWh and reduced 8690 tonnes of CO2 emissions for 2007. **Energy auditing** on some older buildings is expected to bring 25% energy efficiency, while new buildings achieve 50% energy saving through use of sensors at illumination systems, 30% to 40% energy saving through central heating and calorimeter use and, in some cases, 30% electric energy saving through inverter use on elevators. The Durusu **wind energy** project will provide emission reduction of 50,400 tons per year and produce 31.96 MWh of energy. Electric power plants from **domestic solid waste** have been established with capacities between 13 and 23 MW. The Istanbul Metrobus project uses innovative approach to **encourage travel by bus** and allow for fast and reliable transport, resulting with great public acceptance and reduction of CO2 emissions by 38,000 tons per year.

***Domestic solid waste** as energy source*

In the Municipality of Istog in Kosovo, the **renovation** of the municipal building reduced the fuel consumption for heating about 70%. Project included complete refurbishment, new doors and windows, façade and flooring including thermo insulation. The central heating was switched from oil to biomass. Based on monitoring results, the emission of CO2 was reduced by 150 tons per year. In the municipality of Drenes, the **street lighting** has been upgraded to a new one consuming 40% less energy. With a RoI period of only 4.5 years and high dependability on imported energy, mayors across Kosovo have been encouraged to renovate municipal buildings to achieve better thermal insulation and improve the street lighting with more efficient solutions.



***Renovation** for energy efficiency*

Energy Efficiency Project Idea

Having identified the challenges and the current capacity of the network, the group worked on developing project activities that could address some of the challenges and promote innovative use, reuse and conservation of energy. The proposed project would address the following barriers:

- Lack of awareness on the part of the local authorities and the citizens regarding energy efficiency and renewable energy sources;
- Lack of scientific capacity and expertise in creating well dimensioned proposals – especially in the environmental and economic parts and
- Poor local energy strategies or plans and/or poor baseline data on current energy consumption.

The proposed project would have two closely connected components. The first component would focus on conducting **pilot activities** within the NALAS members and the second component would consist of **crosscutting activities**.

NALAS Members

Pilot activities

It is envisioned that one municipality per each region or association would get involved in one pilot activities described below. The pilot activities would have to bring tangible results and be both efficient and effective for the selected municipality. It would also have to meet the energy view of the municipality and the responsible local government association.

Low Energy School Building with Public Awareness Component

With this pilot project, a school building with poor energy rating would be renovated and upgraded to a highly efficient one, with minimal loss of energy and use of renewable energy sources to reduce consumption of external energy. During the process and after its completion, publications would be distributed and, through campaigns and the local media, the public would get informed how proper planning and action can improve the quality of the environment in which schoolchildren work and play.

Even though only one building will be renovated, it is the process that will be most beneficial for the local authorities. By learning how to organize energy audits, conduct feasibility study, properly prepare a project and monitor the energy consumption and efficiency after the upgrade, the local authorities will be able to replicate and adapt the process for other municipal buildings.

This pilot project directly addresses the first two barriers mentioned above.

Objective: Raising awareness of energy efficiency among the young population through model examples
Output: Reduced energy consumption of a school building by involvement of new technologies
Activities:

- Energy audit on a number of buildings to select the most inefficient one
- Feasibility study to produce optimal technical proposal
- Project to implement one or more technologies – boilers, solar panels, heat pumps, biogas, photovoltaic panels and wind turbines
- Monitoring, SCADA
- Training for municipalities
- Guideline and publications
- Advertising campaign
- LED lighting of the façade

Timeline: Between 1 and 1.5 years
Interested associations in Republic of Srpska, Bulgaria, Montenegro, Slovenia and Turkey

Heating and Cooling with Renewable Sources

This pilot activity envisions creation of a system that uses renewable sources – preferably geothermal energy – to provide heating or cooling to connected buildings. A public building would be connected to such a system to become independent from other sources of energy for temperature regulation.

Even though only one building will be connected, this may be the basis for a district heating system. By learning the complete process, local authorities will be able to extend the current implementation to include more buildings and to replicate the process for other areas where such energy sources are available.

Objective: Energy independence of a municipal building. To serve as an example for use of geothermal energy for district heating and/or cooling.
Output: Raised share of renewable energy in the total energy consumption.
Timeline: 1.5 years
Interested association in Macedonia

Street Lighting

The street lighting pilot activity is envisioned to serve as a case study investment project. It will develop the skills at the local authority level to identify, develop and implement energy efficiency projects by providing assistance to a local authority to assess the current situation, complete a feasibility study, develop a project based on the feasibility study and seek for funding to upgrade the street lighting in the municipality. This pilot project will also serve as an example investment opportunity for banks and commercial companies.

Objective: Increased quality and efficiency of street lighting and improved traffic conditions and security
Output: Reduced operational cost of street lighting
Activities:

- Energy audit
- Feasibility study
- Project
- Monitoring / SCADA
- Public awareness campaign

Timeline: 1.5 years
Interested association in Kosovo

Crosscutting Activities

The crosscutting activities would focus on the policy reform needed to support implementation of innovative energy strategies and on disseminating the knowledge gathered from the pilot projects. The crosscutting activities would bring citizens, local authorities, energy companies and investors together to spread knowledge on current trends and activities and encourage joint action for achieving better energy efficiency.

Compilation of model municipal policies and state regulations

This activity addresses the third barrier mentioned above: Poor local energy strategies or plans and/or poor baseline data on current energy consumption.

Having a responsibility to mitigate the energy challenges of the public and private sector, local and regional authorities have to work on new municipal policies and state regulations. This activity would gather experience to show how certain municipal policies and regulations encourage change and would offer model policies that have significant impact among the citizens and businesses. By using the newly available data on energy consumption, local authorities will be able to project future consumption and include return of investment parameters into planning.

Best Practices (pilot experience)

The pilot activities, as well as other current and completed energy activities are invaluable source of experience for the local authorities. By learning the processes for planning, designing and implementing energy projects and by gathering actual experience of fellow local authorities in conducting such projects, the local authorities will be able to focus on activities that have biggest impact and best address their interests. This activity would also offer advice on conducting energy projects, as well as tips and tricks used by the pilot municipalities.

Energy Efficiency Event / Fair at each country

In most cases these and other pilot activities would be easily replicable to other municipalities in South-East Europe. This activity envisions bringing together mayors, energy managers, energy experts and potential investors to learn about the on-going and completed energy activities, present their initiatives and activities and get inspired for future energy actions they could take. Experts and banks would provide advice on planning and funding, enabling quicker and safer development of future energy activities.

International conference and networking

Having gathered significant pilot experience and developed model municipal policies, the whole energy experience can only be complete if all policymakers get together and develop joint action. An international conference and networking would bring together international organizations, state governments and local and regional authorities of South-East Europe to discuss current actions and plan together for joint mitigation of the energy challenges in the region.

Participants

The second meeting of the NALAS Task Force on Energy Efficiency was made possible thanks to the true dedication of all participants. NALAS is very grateful for the shared experience and expertise and for the effort put into creating the proposed project.

Title	Name	Organization	E-mail
Mr	Bostjan Krajnc	Energy Agency of Savinjska, Saleska and Koroska Region	bostjan.krajnc@kssena.velenje.eu
Mr	Petar Gvero	University of Banja Luka	pero@urc.bl.ac.yu
Ms	Elena Anastasova	Dobrich Municipality	e_anastasova@dobrich.bg
Mr	Osman Kiliç	Yıldız Technical University	okilic@yildiz.edu.tr
Mr	Victor Parlicov	Institute for Development And Social Initiatives (IDIS) “Viitorul”	parlicov@yahoo.com
Mr	Igor Golubovic	Pljevlja Municipality, Montenegro	igor.golubovic@pljevlja.cg.yu
Mr	Fadil Ferati	Mayor of Istog municipality	sazanibrahimi@komunat-ks.net
Mr	Sazan Ibrahimi	Association of Kosovo Municipalities	sazanibrahimi@komunat-ks.net
Mr	Avni Sfishta	Association of Kosovo Municipalities	avni.sfishta@gtz.de
Mr	Zoran Manasiev	Municipality of Kocani	zoranma@t-home.mk
Mr	Viktor Arnaudoski	Association of the Units of Local Self-government of Republic of Macedonia	viktor.arnaudoski@zels.org.mk
Ms	Ada Ilia	Albanian Association of Municipalities	aam@albmail.com
Mr	Kelmend Zajazi	NALAS	zajazi@nalas.eu
Mr	Zoran Gligorov	NALAS	gligorov@nalas.eu
Mr	Francois Saint-Ouen	FEDRE	fsaint-ouen@fedre.org