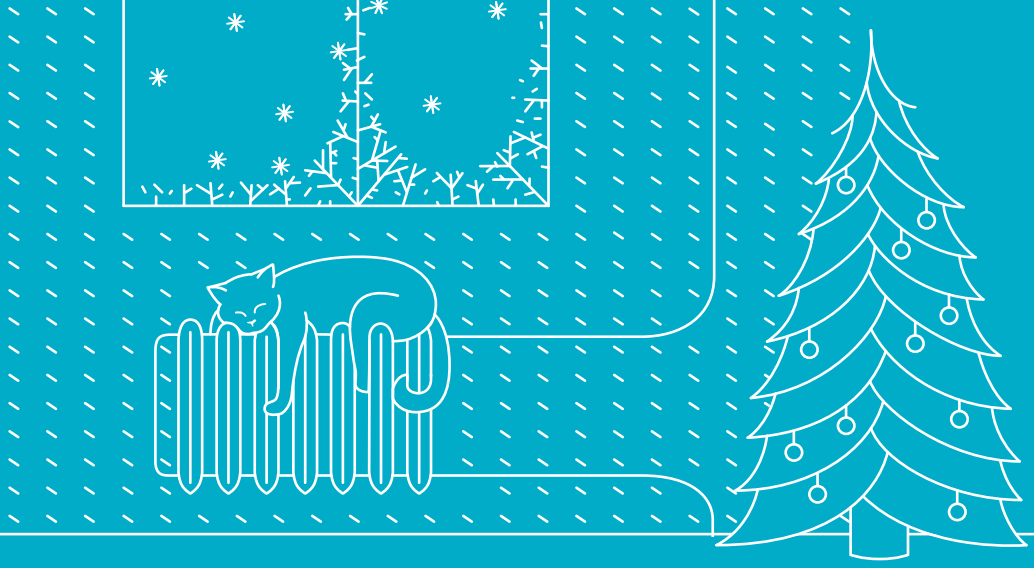

Energy
and Biomass Project
wish you
a Happy New Year!

NEWSLETTER

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ENERGY AND BIOMASS

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Guvernul Republicii Moldova

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20 successful initiatives advocating renewables and energy efficiency have been rewarded at Moldova Eco-Energetica Ceremony, 2015 Edition – an event conducted on 4 December at "Mihai Eminescu" Theatre. More than 400 invitees, including representatives of the country's top Officials, Ministers, Ambassadors, Representatives of International Organisations, Private Sector, Academia and Civil Society attended this event.

"Since its First Edition and up until now we realised that the idea of advocating for energy efficiency and renewables has succeeded. I mean the increased interest of entrepreneurs in cost-effective and innovative businesses in the field of renewables. This edition brought more successful and increased quality of applications. As of 2012, when Moldova Eco-Energetica Contest was launched and by now some 200 energy efficiency and renewables projects were presented, of which 65 projects have been awarded „, Stephane Bride, Deputy Prime Minister, Economy Minister, stated.

Those 76 applications for Moldova Eco Energetica Contest, 2015 Edition, competed under three Awarding Sections: **Best Eco Stories, Ideas and Technologies.** The applications were made by activists, public organizations, private companies, media and NGOs. The applications were reviewed in three stages: (1) Panel Assessment; (2) Field visits for verification purposes; and (3) Coordination Council decision.

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20 finalists – persons, enterprises, public organisations, and NGOs have been designated as **winners of the 2015 Edition:**

Best Solar Energy Project:
- **Photovoltaic:** International Management Institute Nova, Chisinau Municipality
- **Thermal:** Kindergarten "Tereza Sobolevschi", Ungheni Town

Best Geothermal Energy Project:
Fidesco SRL, Chisinau Municipality

Best Bioenergy Project:
- **Solid biofuels:** Vogoenerg SRL, Orhei Town
- **Heat production:** Natur Bravo SA, Floresti

Best Energy Efficiency Project:
- **Construction/Building Sector:** Stefancu-Com SRL, Chisinau
- **Energy Sector:** Termoelectrica SA
- **Public Sector:** National Opera and Ballet Theatre "Maria Biesu"

Best Communication Initiative:
www.ecoportal.md

Best Educational Initiative:
Nicolae Spânu, Chiscareni Village, Sangerei District

Best Youth Initiative:
Dorin Prisăcaru, Chiscareni Village, Sangerei District

Eco technologies:
- Andra Electro Service SRL
- Eco Tronex
- Meldava Grup SRL
- Ecolibri

Eco ideas:
- Orange Moldova SA
- Gazproiect SA
- Group of Companies LE2C
- Elteprod SRL

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Pirkka Tapiola, EU Ambassador to the Republic of Moldova, mentioned: „All the work we are doing together in the Energy sector to improve the lives of Moldovan citizens can only become a success with the engagement of all actors, on the one hand consumers showing interest in improving the way they consume energy and on the other hand energy operators, entrepreneurs like you, coming with ideas and initiatives to support this process.

So far, Moldova Eco-Energetica is the largest competition to reward the most successful renewable and energy efficiency initiatives.

"True reforms materialise when the People, the Private Sector and the Civil Society launch initiatives intended to supplement the Government endeavours aimed at reforming the Energy Sector. The Successful Stories we shall award tonight represent an impressive token of evidence of such joint efforts. I would like to congratulate and thank the Winners who have made the change in their houses, institutions, and communities by having switched to renewable energy and enhanced the energy efficiency of buildings, who advocate a healthy life-style and inspire the others to live in harmony with Mother-Nature", Dafina Gercheva, UN Resident Coordinator and UNDP Resident Representative, said.

Moldova Eco Energetica is organised by the Energy Efficiency Agency in partnership with Moldova Energy and Biomass Project, financed by the European Union, and implemented by UNDP Moldova. The next Edition, Moldova Eco-Energetica 2016, will be launched on 5th of March.

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Briquette and pellet producers from both banks of the Nistru River learning how to produce good quality biofuel

Biofuel producers from both banks of the Nistru River participated in a workshop dedicated to biofuel quality on 17 November this year. Briquette and pellet producers discussed about factors insuring top quality biofuel production in the Republic of Moldova, as well as about factors diminishing the quality of the latter. The workshop was organized by the Energy and Biomass Project in Moldova, financed by the European Union and implemented by the United Nations Development Program.

Workshop participants learned from the experts in biofuel quality about the minimum requirements for solid biofuels that can be determined as a result of technical analysis (humidity, calorific power, ash, volatile materials, dimensions, hardness, density), as well as of the analysis of chemical elements (C, H, O, S, N, Cl), the last being unavailable on the Moldovan market for the time being.

„We've been producing pellets from poplar for over three years now. Since a quality-testing laboratory is missing, the only certificate available on the market of the Republic of Moldova provided by us is the Testing Report. However, biofuel quality testing is vital for both consumers who should know what product they buy and if the latter meets the parameters required for a good operation of the biomass based boiler, and for producers, in order to see how their product positions itself on the quality hierarchic scale, and to set a price that is related to the finished product quality and biomass source used", stated Alexandru Matrohin, biofuel producer participating in the workshop.

It is worth reminding that in December 2014, the Government approved a resolution by which biofuel producers from the Republic of Moldova are obligated to certify the quality of produced biofuel. The Government Resolution came into effect in January 2015, but it is still impossible to apply it due to the lack of a quality certification laboratory for the briquettes and pellets produced locally.

The Energy and Biomass Project provides assistance in strengthening the biofuel production market. One of the programs launched with European assistance

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relates to creation of the first biofuel quality-testing laboratory. „The Energy and Biomass Project will purchase modern equipment for testing the quality of solid biofuel (briquettes and pellets) produced in Moldova with European funds. Such equipment is to be procured within the next months, under an international tender", stated Alexandru Ursul, Energy and Biomass Project Manager.

„The quality of biofuel produced in the Republic of Moldova is crucial for the development of the biomass energy industry, and implicitly of the biofuel production market, which is at an incipient development stage, for the time being", said Grigore Marian, Head of Laboratory for quality testing of solid biofuel under the Agrarian University, one of the two institutions which currently provide the biofuel producers with briquette pellet quality testing reports.

The workshop participants visited the Laboratory for testing the quality of solid biofuel under the Agrarian University, where they could see the partial quality testing stages for testing briquettes and pellets with the equipment available in the laboratory. The participants also visited a solid biofuel producer and shared their experience, and lessons learned in transforming waste into biofuel.

Energy and Biomass Project II is a three-year project implemented in 2015-2017. The total project budget is 9.41 million Euro provided by the European Union and implemented by the United Nations Development Program. For more information about the project, please access the website www.biomasa.md or our page on Facebook: Energie din Biomasă/ Biomass Energy

Moldova can produce more 6,000 MWth of heat and 4,000 MWel of electricity by applying co-generation technology

Republic of Moldova estimated its potential for cogeneration based on useful heat energy to over 6,222 MW of heat and 4,636 MW of electricity out of renewable sources. Using natural energy sources based on advanced technologies can reduce energy dependence, while enhancing economic development. The topic of transforming the agricultural, industrial and urban waste into heat and power has been discussed at the National Forum "Bioenergy: Towards Local Energy Self-Sufficiency", conducted on 2 December in the framework of the Eco-Energy Week.

"The current event is at its second edition, and our intentions is that it becomes a tradition. We have tackled this topic in a different way, namely by advocating for the country's energy self-sufficiency, following a bottom-up approach. This is what we have seen in European countries. Any community is able to cover its energy needs out of agricultural waste. And Moldova, theoretically speaking, could cover almost half of its natural gas imports out of biomass-based energy", stated Stephane Bride, Deputy Prime Minister, Economy Minister.

Co-generation represents a technologically mature and efficient approach in the competitive production of power and heat energy. Co-generation is widely used in the EU countries, while, in the Republic of Moldova, is at an incipient development stage. Nowadays, there are several Moldovan companies that use their generated waste to cover their own needs of heat and power, and they deliver the excess of electricity to the national distribution network.

The 200 Forum participants, mainly entrepreneurs, representatives of local governments and Academia got familiar with the advanced experience of many European states, which produce biogas and generate heat and power out of agricultural residuals. A presented case study was of German communities, which ensure their energy self-sufficiency due to co-generation.

Pirkka Tapiola, EU Ambassador to the Republic of Moldova, mentioned: „With Bioenergy, Moldova has a great opportunity to diversify its energy supply and reinforce the use of energy locally produced. This sector also gives an opportunity to create additional jobs in the country. This is the reason why EU is an active

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supporter of this sector in Moldova. I welcome forums like today and the participation of external guests who should give us an opportunity to improve the work we do and gain from their experiences".

The first "Bioenergy" National Forum was conducted in 2014 and covered the topic of energy crops and the perspectives of their growing in the Republic of Moldova.

"The United Nations Development Programme supports Moldova on its way towards developing a smart energy market, which enhances the access to locally available clean energy and reduces the country dependence on external energy suppliers, develops the country economy by creating new jobs and by launching new businesses and, last but not least, ensures cleaner environment", noted Dafina Gercheva, UNDP, Resident Representative / UN Resident Coordinator in Moldova.

The National Forum "Bioenergy: Towards Local Energy Self-sufficiency" is one of the event series conducted under the Eco-Energy Week. The schedule of the Week included events, debate platforms, and meetings dedicated to the development of renewable energy sector and energy efficiency promotion. The Eco-Energy Week culminated with Moldova Eco-Energetica Gala.

Moldovan Journalists studying the best practice in renewable energy and energy efficiency from market leaders in Denmark

A group of Moldovan journalists participated in a study tour to Denmark within 7-11 December to learn the experience of this country in using biomass energy. The study tour was organized by the Energy and Biomass Project, financed by the European Union and implemented by the United Nations Development Program, in partnership with the Chamber of Commerce and Industry of the Republic of Moldova, Danish Innovation Network for Biomass (INBIOM), and Enterprise Europe Network Program.

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Denmark is among the world leaders in using renewable energy sources and energy efficiency, undertaking to become the first country in the world independent from fossil energy resources by 2050.

The study tour included presentation sessions by Danish national authorities and journalists specialized in the energy sector, as well as visits to the most important bioenergy projects in Denmark, such as the Samsoe Island, which is supplied by 100% with renewable energy, Masnedo Island producing heat power for a town with seven thousand inhabitants and greenhouses from the region. The cogeneration plant produces over 8 MW of electric power, and 21 MW of heat power, and consumes annually circa 40 thousand tons of agricultural waste, particularly straw.

„Today, we are visiting the Samsoe Island, where people drive electric cars, have biomass based heating, electricity from wind turbines and photovoltaic panels, and hot water from solar collectors. The population of the island invested in these green technologies, local people being the owners of technologies and taking care that they operate correctly and that the energy tariffs be attractive for them. Before that, we visited a Danish briquetting line manufacturing company and were happy to hear that a Moldovan wine producer has recently purchased one such line and soon will produce briquettes out of remnants from vine pruning," stated Ina Zglavuță, Press Office at Energy and Biomass Project in Moldova.

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The delegation members also visited the most important public-private organization created by the Danish Government – State of Green, which includes the most important private and state actors in renewable energy and energy efficiency sector.

The journalists were impressed by the extent of using renewable energy sources in all areas. „Farmers transform waste into energy: pig farms are heated by power generated from straw, biogas plants generating heat and electric power as a result of using waste from pig farms and straw. Nothing is wasted", said Rodica Căruntu, Prime TV reporter.

„We visited a town similar to Soroca by population, where 70% of the energy reaching the houses through a centralized system comes from the straw that burned in a large heat power plant operated automatically by only 2-3 employees per shift. Everything is operated automatically, starting with ballot loading, putting on the conveyor, introducing in the boiler, and cleaning the boiler. Another biomass based heat power plant will be built during the next two years, which will cover the total energy needs of the town, thus substituting the natural gas," stated Igor Fomin, chief editor at on-line publication MyBusiness.md

UN Building in Copenhagen benefits from electric power generated by over 1000 photovoltaic panels installed on its roof, which covers the consumption needs by 50%. The roof is built so as to collect the rain water which is subsequently used in the flash toilet, while the seawater is used for the cooling system in the building, stated Cristina Panov, specialist at Business Events and International Relations Division of the Chamber of Commerce and Industry.

The delegation also visited the specialized newspaper Landbrugsavisen, read by 90% of the Danish farmers, the Aarhus University, the Danish Council for Agriculture, representing companies from agro-industrial and bioenergy sectors, with a total of 150 thousand employees and 21 billion Euro in exports.

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The Energy and Biomass Project is also present on Facebook. Here, we communicate informally, but not less consistently! Access our page on Facebook (Biomass Energy/Energie din Biomasă), like it and follow all our news in real time, as well as the news about our partners and beneficiaries, and best international practice.

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Biomass based heat and electric power plants as an alternative for the current thermoelectric plants (CETs)

A group of Italian companies is interested in implementing public-private partnerships for building biomass based cogeneration heat plants in the Republic of Moldova. Experts from the energy sector state that such plants could be an alternative for the thermoelectric plants (CETs) currently operating in our country, which are technologically obsolete and insure a very low output.

Dorin Cibotaru represents the group of Italian companies LE2C dealing with generation of heat and electric power by burning biomass.

„Our proposal is to design and install CHP combustion plants which would use straw, sunflower and corn residues, brunches, viticulture sector residues, stone fruit processing residues, wood residues, etc.

The installation of such heat power plants would contribute to increasing the energy independence of the Republic of Moldova, as well as stabilizing the tariffs for electric and heat power supply. Energetically autonomous localities and enterprises could be also created. Among potential clients we see local and district public administration authorities, and agriculture and food processing enterprises", stated Dorin Cibotau.

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The group of companies offer two standard design options:

1. MW electric power + 5 MW heat power plant, furnace power 9 MWt. Estimated cost: 8– 10 million Euro

2. MW electric power + 8 MW heat power plant, furnace power 16 MWt. Estimated cost: 14 – 16 million Euro

Other capacity designs can be eventually proposed, depending on the client's needs.

LE2C company representative stated that, in order to implement such projects in the Republic of Moldova, it is necessary to carry out a study for assessing the average purchasing price of agricultural biomass, the possibility to supply electric power in the national network at market price, and the possibility to supply heat power to final consumers at attractive and stable prices, compared to the current ones.

„Biomass availability at a stable price and for a long term represents the critical part of the project. We consider it necessary to identify biomass suppliers within a 20–30 km range and sign long term biomass supply contracts", remarked the representative of the group of Italian companies LE2C

He stated that the technology offered by them had been tested in several countries and proved to be competitive.

The group of Italian companies propose implementing some public-private partnerships, within which the risk for assembling and availability of the plant would be assumed by the private partner, while the public partner would assume the risk for supplying the final consumer with heat power.

Cogeneration implies concurrent production at the same plant (heat engine–power generator group, turbine, etc.) of both heat and electric power. In case of high efficiency cogeneration plants, the process results in transformation by 90% of primary energy.

Under such projects, it is possible to insure financing by leasing or commercial loan at a European interest rate, for up to 14 years. Along with this, the project beneficiary will have to invest 20–25%.

Experts in the given area say this project is a very attractive one. However, such systems can be implemented mainly for centralized heating supply systems.

Currently, the majority of centralized heating systems operate on natural gas or oil fuel. They are to a large extent technologically obsolete and insure a low output.

The project presented by the group of Italian companies LE2C is one of the winners of the Fair of Eco-Responsible Ideas 2015.

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A previously non-existing market has now become a fait accompli

Alexandru Ursul,
Manager of the Energy and Biomass Project in Moldova

● Mr. Alexandru Ursul, for 4 years, you've been Manager of the Energy and Biomass Project in Moldova, financed by the European Union, and implemented by UNDP. What are the main accomplishments, as well as the lessons learned during this period?

○ The first phase of the project was unfolded within 2011-2014, and we are absolutely convinced that the main result of these four years is the creation of a good foundation for the renewable energy market in the Republic of Moldova, which includes local sources, particularly solid biomass from agricultural residues. A previously non-existing market has now become a fait accompli. This market comprises all the necessary components: there are biofuel producers, hundreds of final users or consumers, including public institutions, small enterprises and individual households, there are companies manufacturing or assembling biomass boilers in Moldova, with own or imported technologies.

Another important result of the Project is the creation and strengthening of a group of institutions and independent experts, representatives of private sector, NGOs, and simple beneficiaries who support this reform of the energy sector in the Republic of Moldova, by acknowledging that the reform constitutes a priority, in conditions of the country's almost full dependence on the import of energy resources. All these people understand that a renewable energy market contributes to local social and economic development by creating new jobs, small markets operating at local or regional level and stimulating a certain economic circuit.

Equally important is the good cooperation established between the Project and the main beneficiary and local partner, the Ministry of Economy and the institutions under its subordination, the Agency for Energy Efficiency, Energy Efficiency Fund, as well as the partnerships with other government institutions, which insure the accomplishment of good results under the project.

There are many lessons learned, the main one being linked to the creation of local market, which is now in place, but requires improvement. We realized that the biofuel based on agricultural residues in Moldova is specific and complex, implying rather high production costs, the agricultural residues requiring special technologies. There is one more thing needed: a biofuel quality control and certification system should be put in place to insure good and uniform quality products.

The market also requires new specialists, possessing knowledges that used to be missing until currently. I am talking about heat plant operators, specialists in biofuel production, specialists in agriculture, including in growing energy crops, which are viewed as a sustainable and viable source for Moldova, capable to insure a higher biofuel quality than the raw material from agricultural residues.

We also noticed the need for putting in place a regular training system for the operators of heat plants already in operation. It is also necessary to provide ongoing training of producers, particularly on subjects relating to quality, business management, and funding sources.

All these issues were taken into account upon developing the second phase of the Energy and Biomass Project, which started 2015, and will be tackled throughout the project.

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- Even though initially one could hear voices of criticism addressed to the Energy and Biomass Project, that it would lead Moldova back to „dry manure/ tezec based heating", later on, the Project was appreciated by many as being innovatory for Moldova. What were the innovatory approaches in this regard?

- At the beginning, we faced a certain reluctance on behalf of many people who would perceive the use of biomass fuel as a step backwards. However, the Agency for Energy Efficiency, local and foreign experts and consultants helped us convince the people this is untrue. The biomass fuel burning technologies did not exist and were unknown here, while their implementation marked an important technological transfer. Biomass based heat plants are not simply burning residues, but rather a product, while the processes are computerized, with a high degree of efficiency. Thus, everybody understood very soon that the Energy and Biomass Project is an innovative one.

  Obviously, it required considerable efforts to convince the consumers and the broad public about the benefits of biomass. We used innovatory communication methods, particularly in communicating with the population from rural localities. We organized many mobile exhibitions in district centers and villages, entitles Biomass Boiler Caravans. During these Caravans, the Project and boiler manufacturing company experts explained how the latter operate, while the consumers could see it in practice, could touch the boilers and convince themselves about the benefits of biomass based heating.

  A very good result was achieved by implementing the idea of organizing an annual competition of best renewable energy sources and energy efficiency initiatives and celebrating them within a national standard event, entitles Gala of Awards Moldova Eco-Energetică. I must mention that the event is unique in the South-East European region, and we contributed though it to motivating the people with initiative to launch innovatory projects, and informing a broader public through all information sources, including mass media, about the benefits of using renewable energy and energy efficiency.

  Another useful and efficient tool was promoting the production of renewable energy among young people. In 2013, we organized the first open air concert of FurioSnails Band with electric power supply from photovoltaic panels installed nearby. Later, this activity grew into a festival joining foreign bands, and is now a very much-expected event by young and adult people every year. SunDă-i Fest is a very attractive way of promoting efficient energy technologies and the use of all source of renewable energy, not only biomass. At SunDăi Fest we promoted youth initiatives in schools, colleges, universities, as it benefits from a very high flow of visitors given the fact that is it held in the Central Park of Chisinau.

- You brought a lot of knowledge from the EU countries, and communication involved to a very large extent local communities. Why is it important to discuss with every inhabitant in the villages of the country?

- Understanding how big is the task to bring information to a broader public and reach the most ordinary beneficiaries, we insisted on having a direct communication with the beneficiaries. We applied the concept of the United National Development Program, which involves mobilizing the communities where certain projects are being implemented. The Concept envisions organization of meetings in the communities throughout the entire project implementation period, establishing trustful relations between the implementers and beneficiaries. In this way, we can change the mentality, and the population of these localities has become a supporter of solid biomass fuel and of renewable energy sources.

- The EBPM has created a leasing mechanism for the procurement of production lines, while also providing subsidies to households for procurement of solid biomass boilers. What was the impact of these activities?

- The impact of activities for supporting biofuel producers and subsidization line was even higher than expected. The leasing mechanism proved to be very efficient for the buyers of production equipment, 35 businesses being financially supported through it. We were aware of the fact that in the beginning, the pioneers in this area needed support, while the leasing line helped in launching the market, and boosted the launching of new businesses in the given area. Currently, we have over 120 production companies. We do appreciate this as a great accomplishment, as a network of producers was created, which previously didn't simply exist.

  The subsidization mechanism also had a very big impact. 600 families from small towns and villages received subsidies in the amount of 1300 Euro each during the first Project phase. Those 600 boilers installed had a huge demonstrative impact, many

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people getting inspired by their neighbors, relatives, and friends. So, more applications than planned for the whole year were filed on the opening date of applying for subsidies in 2015. As a result, we reserved money for an additional number of 150 projects in order to meet such demand. According to information received from the field, the beneficiaries are very happy and say they had a „much better heating". Consumers say they previously used gas to heat their homes and paid much without having heating, while after installing biomass boilers the things have changed.

It is a certain fact that the demand is much higher than the possibilities of the Energy and Biomass Project in Moldova, and the mechanism has been taken over by the Agency for Energy Efficiency, which will finance the subsidization mechanism through the Energy Efficiency Fund, thus insuring continuation of this initiative.

Another important element is the foundation of 30 new businesses, companies assembling or even fully manufacturing biomass boilers in the Republic of Moldova.

- Which do you think were you main accomplishments as Manager of the Energy and Biomass Project and what are your plans for the near future?

- I believe I managed to do three things. As a manager, I created a very good team of professionals with a high responsibility level, and this fact has insured good results under the Project. I can say I have worked in a very efficient team.

  I also managed to establish constructive relations with partners from the country, with the United Nations Office, European Union Delegation, other stakeholders, local experts, etc., who also contributed to the success of the Energy and Biomass Project in Moldova.

The Newsletter is produced by the Energy and Biomass Project II. The project has a total budget of 9.41 million euros, granted by the European Union and it is implemented by the United Nations Development Programme during 2015-2017.

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