ACTION PLAN FOR ENERGY DEVELOPMENT FROM FOREST WOOD BIOMASS, BULGARIA

PARTNER 8

Contents:

EXECUTIVE SUMMARY

The role of renewable energy for the development of the national economy in Bulgaria, as in many other European countries, continuously increases and a major share in its production take the biomass from forests.

In international policy documents and processes related to both climate change and reducing greenhouse gas emissions, biomass from forests is considered as sustainable source of energy, as the carbon dioxide, released during its combustion, is absorbed back from forest ecosystems in the process of photosynthesis and growth, which leads to production of new wood pulp. According to international rules of the UN Framework Convention on Climate Change and the Kyoto Protocol, the use of biomass in the energy sector reported a zero rate. Therefore, the effective use of forest biomass is set as a priority objective in the EU Forest Strategy and is a key part of the strategy of the European Commission for Sustainable Energy Union with a future-oriented policy on climate change.

In recent years limiting the dependency on imported fossil fuels and their replacement by renewable energy sources has gained strategic importance. In Bulgaria the majority of forest biomass is used locally, making it a major factor in ensuring the energy independence and stability in rural and mountainous areas.

However, we should not forget that the resources provided by forests are not inexhaustible. Their use must be subject to a balanced approach that takes into account not only economic needs, but also environmental and social role of forests. Efficient and rational use of forest biomass must be supported by targeted policy initiatives at national, European and international level, in order to achieve the defined by UN Global goals of sustainable development, especially in the climate, energy and forest sectors. Allowing excessive use, even for a short period of time will lead to reduced absorption of greenhouse gases, removal of minerals and impoverishment of the soil, disruption of forest ecosystem functions, especially the supply of drinking water, etc.

BIO4ECO project provides us with an unique opportunity to offer new, innovative solutions to achieve the necessary balance between effective use of forest resources and environmental protection, which will support the economic development of our regions.

GENERAL INFORMATION

Project:	Sustainable regional bioenergy policies : a game changer, BIO4ECO (PGI1518)
Partner organisation:	EXECUTIVE FOREST AGENCY
Other partner organisation involved (if relevant):	N/A
Country:	BULGARIA
NUTS2 region:	Югозападен (Yugozapaden)
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POLICY CONTEXT

The project addresses Operational Programme "Innovation and Competitiveness" (OPIC), specifically Axis **3 "Energy and resource efficiency".** It is directly engaged in smart and sustainable growth and has also been developed in line with the objectives the 2020 Energy Strategy of the Republic of Bulgaria.

As result of Bio4Eco implementation by Partner 8 OPIC will be improved in terms of providing conditions for supporting the implementation of Axis 3 and in particular, connected with the production and usage of solid wood biomass. Under this axis OPIC supports pilot and demonstrative actions for increasing the efficient use of resources, including through replacement of old and/or inefficient technologies.

In the course of projects' implementation group of stakeholders representing state administration, regional authorities, municipalities, scientific institutions was formed in order to develop Action plan for effective use of forest biomass for production of heating energy.

The project staff of EFA held two meetings with the administrative body of Operational Programme Innovation and Competitiveness (OPIC) 2014-2020, where the draft National Action plan for energy from forest biomass 2018-2027 was presented and discussed. It was recognized that wood biomass is one of the most important components of the RES and it's burning in domestic stoves for heating causes serious problems for the environment. The NAPEDFWB proposes concrete actions to increase the effectiveness of heat production from wood biomass and to minimize the air pollution by its burning. The priority areas and activities set in the NAPEDFWB will be taken into consideration while implementing Axis 3 of OPIC and will help to improve the support for smart and sustainable growth of the most economically vulnerable mountains and fore-mountain regions in Bulgaria.

Up to now the implementation of the project helped eligibility of municipalities as beneficiaries in 2 projects supported by Life program and Operational Program Environment to replace solid fuel stoves (wood and coal) with more sophisticated installations on biomass.

OVERVIEW OF THE CURRENT SITUATION

The area of the forest territories is 4,223 million ha and the total standing stock is 680 million cubic meters. In Bulgaria, over the last 5 years, an average of about 8.0-8.3 million cubic meters of standing stock has been produced, or around 6,6-7,0 million cubic meters of lying timber volume. Approximately 60% of it (or about 4.0 million cubic meters) is of the category small-sized wood and wood of the categories firewood, low-quality medium-sized and small-sized wood, branches, brush-wood, etc.). According to expert estimates, the potential resource of forests in Bulgaria is for the production of about 6 million m^3 of wood suitable for energy production. The use of wood for energy purposes is important as a means of combating energy poverty and opens new business opportunities.

The third national report on the progress of Bulgaria in the promotion and the use of renewable energy by the end of 2015 indicates that the biomass is the main renewable source used in the country, with gross domestic consumption of biomass in the country at 1 174 toe in 2013 and 1 115 toe in 2014. Wood biomass continues to be the main type of biomass used in the country, and it is mostly provided by local wood production. Its share in 2013 is 65.6% of the gross domestic consumption of biomass and 67% in 2014. In 2013 and 2014 the gross domestic wood consumption for energy was set at respectively 8 479 927 m^3 (771 toe) and 8 231 521 m^3 (747 toe).

In Bulgaria, the most common type of wood biomass is firewood, which is a major component of the country's energy balance as a source of heat energy production. It is used especially in small towns and villages for heating and household purposes by direct burning in stoves and recently also in other facilities. This wood is currently largely utilized by the population inefficiently, through direct burning for heating in primitive stoves with energy conversion efficiency up to 40%, and a small part of it is also used for the production of various types of wood boards and pulp.

Purchased quantities of firewood and average prices per 100 households, according to NSI information

		2012		2013		2014		2015		2016	
	Measure	quantity	Average price - leva	quantity	Average price - leva	quantity	Average price – leva	quantity	Average price - leva	quantity	Average price - leva
Wood	**m³**	**271,5**	**60,51**	**224,5**	**57,94**	**255,6**	**56,99**	**401,0**	**58,88**	**386,2**	**63,67**

One of the main objectives of Bio4Eco project in Bulgaria is to introduce the international good practices and experience in the field of forest biomass use for energy purposes and with the obtained knowledge to strengthen the national and regional policies and strategies in development and implementation of innovative approaches for more effective production of heating energy from forest biomass.

PRIORITY AREAS AND ACTIONS FOR ACHIEVING MORE EFFECTIVE USE OF FOREST BIOMASS OBSERVING THE PRINCIPLES OF SUSUTAINABLE FOREST MANAGEMENT

In the frames of Bio4Eco project and based on the regional exchange of information and good practices three scenarios were examined to determine the potential of forest biomass for energy production in Bulgaria:

• Formal, based on actual harvesting / production of wood and of branches and rods (waste wood).

• Realistic, based on the balance and consumption of round timber suitable for energy production and the planned waste wood (branches and rods).

• Optimistic, based on production / harvesting of round timber and possible collection of waste wood (branches and rods). To determine the potential of waste wood that can be used for biomass, it is assumed that about 50% of the quantities of waste wood, as a difference between standing and lying wood, can be collected and used for energy purposes.

Valuable experience and knowledge transfer at regional level, concerning effective use of wood biomass, was gained at the 5th Biomass Fair in Catalonia, the participation in which was organized by the PP2 - Government of Catalonia - Directorate General of Natural Environment and at the Thematic workshop “How to increase the social acceptance of bioenergy policies”, held in Brashov, Romania. The draft priorities, actions and measures in national policies for achieving effective use of forest biomass in Bulgaria was presented and discussed at the Thematic workshop “Prioritization of bioenergy production at different geographical scales”, held in Paris, 2018.

Based on the conducted analyses and experience gained during the international events organizes in the frames of the project, the following priorities and actions were identified:

Priority 1

Sustainable production of biomass as a renewable energy source

- Measure 1.1 Reducing the country's energy dependence on fossil fuels
- Activity 1.1.1 Increasing the collection of waste from logging to producing energy
- Activity 1.1.2. Creating energy crops plantations from fast-growing tree species
- Activity 1.1.3. Increasing forest area and tree stock by afforestation of abandoned farmland
- Measure 1.2 Increasing timber harvesting and mobilization of its consumption in the framework of sustainable forest management
- Activity 1.2.1 Establishing regional logistics centers to provide a link between vendors of round timber and the users of processed wood
- Activity 1.2.2 Mobilizing damaged wood from forest areas affected by natural disasters
- Activity 1.2.3 Increasing the amount of wood use in the country, observing the principles of sustainability and uniformity

Responsible institutions: Ministry of agriculture, food and forestry; State forest companies; municipalities; private forest owners

Priority 2

Effective forest biomass energy production to diversify revenue in the forestry sector

- Measure 2.1 Implementation of carbon neutral energy production activities
- Measure 2.2 Increasing the use of processed forest biomass for energy production

Responsible institutions: Ministry of agriculture, food and forestry – Executive Forest Agency; Ministry of environment and waters; State forest companies; municipalities; University of Forestry; private forest owners; wood processing industry

Priority 3

Reduce air pollution and decarbonisation of the building stock by providing opportunities for introducing new methods and ways to consume forest biomass energy

- Measure 3.1 Supporting the transition from local (individual) to central (collective) and from low-efficiency to high-efficiency forest biomass heating
- Activity 3.1.1 Implementation of pilot projects to finance activities related to the production / distribution of forest biomass energy
- Activity 3.1.2 Implementation of activities to stimulate the construction of installations and transmission network for collective / group production and use of forest biomass energy
- Measure 3.2 Supporting the transition from the use of conventional / fossil fuels to forest biomass

Responsible institutions: Ministry of Economy – coordinator of OPIC; Ministry of agriculture, food and forestry – State forest companies; municipalities; wood processing industry

Priority 4

Strengthen the legal and policy framework to ensure the sustainable development of forest biomass energy

- Measure 4.1 Strengthening the legal and policy framework to ensure the sustainable development of forest biomass energy
- Measure 4.2 Development of the national regulatory framework
- Measure 4.3 Development and implementation of national policies and strategic documents in the field of forestry, timber processing and joinery and the production of renewable energy

Responsible institutions: Ministry of Economy – coordinator of OPIC; Ministry of energy; Ministry of agriculture, food and forestry – Executive Forest Agency; Ministry of Regional development; Branch Chamber of wood processing and furniture industry

Priority 5

Restoring and developing research activities and linking them to the needs of forest biomass energy production

- Measure 5.1 Implementation of scientific activities related to the production of forest biomass energy
- Measure 5.2 Increasing the capacity to implement activities related to the production of forest biomass energy

Responsible institutions: Ministry of agriculture, food and forestry – Executive Forest Agency, State forest companies; municipalities; University of Forestry; Forest Research Institute

Priority 6

Providing information, publicity and transparency in the sustainable production of forest biomass energy

- Measure 6.1 Elaboration, adoption and implementation of the Communication Strategy of EFA
- Measure 6.2 Improvement and harmonization of the available information on forests and forestry

Responsible institutions: Ministry of agriculture, food and forestry – Executive Forest Agency; State forest companies; municipalities; National Statistical Institute

The implementation of these priorities aim to improve political, strategic and regulatory framework and on to introduce the necessary incentives and modern green technologies for more efficient use of forest biomass.

NEXT STEPS FOR IMPLEMENTATION OF THE ACTION PLAN

Priority Action 1	Sustainable production of biomass as a renewable energy source
1. Policy context:	Operational Programme "Innovation and Competitiveness" (OPIC), Axis 3 “Energy and resource efficiency”
2. Background (please describe the lessons learnt from the project that constitute the basis for the development of the present action plan)	The balance between the economic, ecological and social functions of forests and the sustainable development of sustainable forest management is a challenge for many European countries. Several examples of good practices were demonstrated within the frames of bio4eco project. Latvia presented sustainable land management and possibilities for establishment of fast growing plantations for biomass production using selected material. Good examples for establishment of logistic centers for collection of low quality woood and production of heat energy to the local communities were presented by catalonia and france. Valuable community scale model for biomass utilization for sustainable local economic development and encouragement of local businesses to develop along biomass value chain was developed in Romania and implemented in Ghelinta. This model is particularly suitable for the conditions of small settlements in Bulgaria. Model for resilient supply chain considering sustainable, legal and certified management of forest resources through the efficient use of wood of thermal energy with minimal environmental impacts was demonstrated by Italy. The above mentioned good examples are directly linked to the urgent measures and actions that are included in the Bulgarian

	action plan for more effective use of forest biomass for energy production.
3. Action (please list and describe the actions to be implemented)	Increased share of plantations for timber biomass production in the management plans Establishment of regional logistics centers in cooperation with the state forest enterprises Mobilization of waste and damaged wood for heat production Support for the replacement of fossil fuels with forest biomass Supporting the transition from local (individual) to central (collective) and from low-efficiency to high-efficiency forest biomass heating
4. Players involved (please explain their role)	state forest companies, ministries, universities, private companies, municipalities engaged with forest and land management
5. Timeframe	2018-2021
6. Expected impacts (please define KPI)	improved efficiency in using timber biomass for energy purposes, improved management of forests

Priority Action 2	Connection with national policy and impact on strategic documents
1. Policy context:	Operational Programme "Innovation and Competitiveness" (OPIC), Axis 3 “Energy and resource efficiency”
2. Background (please describe the lessons learnt from the project that constitute the basis for the development of the present action plan)	Integration of the principles of sustainable forest management in the national and local policies and strategies is key prerequisite for achieving sustainable development especially in rural areas. Good examples in this aspect were presented by North Karelia developing interfaces between bioenergy and land use planning and the GreenHUB initiative of Finland. The idea of association of community experts, who

	are best acquainted with the local problems, to be involved in solving problems related to efficient use of nature resources and helping the regional development is particularly valuable for Bulgaria. Very effective in this regard is also the approach of French federation of forest municipalities which demonstrated the feasibility and relevance of local development programs. Along the development of large cogeneration plant using wood biomass, French forest municipalities created special program providing tools to elected representatives for the development of rural boilers using local biomass. The PAT is therefore a decision support tool provided to facilitate and organize a local timber and biomass supply, it takes into account available forest and logistic data and the expertise of local stakeholders from the forest and wood sector. At the international seminar held in Bansko Bulgaria, a special meeting was organized between representatives of French and Bulgarian forest municipalities to exchange experience and ideas. Good examples for incorporating the problems of effective use of timber biomass in regional policies were presented by Catalonia and Italy.
3. Action (please list and describe the actions to be implemented)	2 meetings with the national coordinator for OPIC 4 meetings of Advisory group with participation of key stakeholders 1 informal meeting with stakeholders for discussion of the influence of the National action plan on national and regional policies

	Preparation of Ordinance on requirements for use of forest biomass for household heating Connection with the implementation of Integrated plan in the field of energy and climate of Republic of Bulgaria.
4. Players involved (please explain their role)	ministries, universities, municipalities responsible and working in the field of energy efficiency and climate
5. Timeframe	2018-2021
6. Expected impacts (please define KPI)	improved national policies and strategies related to use of timber biomass for energy purposes

Priority Action 3	Dissemination of success stories
1. Policy context:	Operational Programme "Innovation and Competitiveness" (OPIC), Axis 3 “Energy and resource efficiency”
2. Background (please describe the lessons learnt from the project that constitute the basis for the development of the present action plan)	Information on the international good practices will be regularly provided to the stakeholders and target groups as SME, public authorities and NGO’s. Inspired by the projects implementation national and regional good practices will be collected and new methods supporting innovative decisions in the field of effective use of forest biomass for energy purposes will be communicated.
3. Action (please list and describe the actions to be implemented)	Cooperation with OPIC and Norway programme and dissemination of good examples and eventual pilot projects, related to replacement of fossil fuels with forest biomass Promotion of effective use of forest biomass to small and middle size municipalities and municipalities having problems with air pollution

4. Players involved (please explain their role)	state forest companies, ministries, universities, private companies, municipalities engaged with forest and land management
5. Timeframe	2018-2021
6. Expected impacts (please define KPI)	improved public awareness on the problems of timber resources and efficient use of timber biomass for production of heat energy for household heating, introduction of more efficient methods and technologies for production of heating energy from forest biomass

MONITORING AND IMPACT OF THE ACTION PLAN

Monitoring procedures have been developed in order to monitor the implementation of the Action Plan. It is foreseen to establishment Advisory Group with representatives of some key stakeholders. The main tasks of the Advisory Group are to monitor the implementation of the National Plan in its entirety, to assess the degree of achievement of its priorities and to formulate suggestions for corrective and preventive actions in case of established deviations or changes in the environment. In order to carry out its tasks, the Advisory Group will be technically and institutionally assisted by an EFA Expert Group, which will provide a summary of the progress of the activities, measures and priorities.

The successful implementation of the National Action Plan requires active contacts with competent ministries and other institutions responsible for managing financial mechanisms, European and other programs and instruments to ensure financing of the measures and activities set out in NAPEDFWB.

The Expert Group and the Advisory Group were established with orders of the Executive director of EFA, with participation of staff from the Forestry Executive Forest Agency and representatives of stakeholders.

The impact of NAPEDFWB is expected mainly in improving national and regional strategies regarding the use of RES and particularly wood biomass for energy purposes. Up to now the Action plan was included in the draft Integrated plan in the field of energy and climate of Republic of Bulgaria.

SIGNATURE:

The Executive Forest Agency agrees to support and promote the implementation the Action plan detailed above.

I confirm that I have required authority of my organization to do so and that the required authorization process of my organization has been duly carried out.

Date:……..

Name and position:

Daniela ANGELOVA, Project manager

Signature:

SIGNATURE:

The Executive Forest Agency agrees to support and promote the implementation the Action plan detailed above.

I confirm that I have required authority of my organization to do so and that the required authorization process of my organization has been duly carried out.

Date: 27.05.2019

Name and position:

Daniela ANGELOVA, Project manager

Signature: