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TERMS OF REFERENCE

National Consultant on Solid Biomass Production

Duty station:	Chisinau, Moldova
Reference to the project:	Moldova Energy and Biomass Project /MEBP
Contract type:	Individual Contract (IC)
Duration of the assignment:	October 2016 – November 2017 (40 days of consultancy)

A. BACKGROUND AND CONTEXT OF THE ASSIGNMENT

Moldova Energy and Biomass Project (MEBP) funded by the European Union and implemented by UNDP was launched in 2011 with the goal to develop the biomass market in Moldova. MEBP Phase One (2011-2014) with a budget of 14.56 million EUR concentrated on demand creation through setting up solid biomass-based heating systems in public and private sectors. At the same time, another significant effort concentrated on development of the private sector that would meet the growing demand for biomass. Presently, main source of biomass in Moldova constitutes agricultural and wood processing waste: straw, sun flower, orchard and vineyard pruning, wood processing and other waste or by-products.

In 2015, MEBP entered into its Second Phase in the framework of the Eastern Partnership Integration and Cooperation (EaPIC) programme, based on its continued high relevance and the clearly identified need to further support the consolidation of the emerging biomass market in the country. The extension timeframe spans until the end of 2017 with additional EU-funding of 9.46 million EUR.

The main objective of the project phase II is to scale up the successful activities and extend them to so far not covered or underrepresented regions, specifically Transnistria, Gagauzia and Taraclia, and to support the further consolidation of the Biomass market.

The local biomass fuel market developed rapidly over the last 4 years. Some positive signals can be easily spotted on the market, including the increasing number of entrepreneurs, the steadily growing number of consumers ready to switch to biomass for household heating, the growing number of institutions ready to adopt other sources of energy for heating, etc. Despite its increasing popularity, the solid biomass market continues to struggle with various limiting factors throughout its sub-sectors: boiler producers, bio-fuel producers, biomass heating system maintenance service providers, quality insurance laboratories, etc. All of these sectors are in need to develop their capacities in terms of technology, client relations management, safety management in production, regular maintenance of existing systems and improving the quality of their products. Local Research and development (R&D) and extension service are at their incipient stages and are underfinanced, which makes its outreach weak and unable to live up to the challenges of today.

At this stage, the issue of assuring the quality of biomass fuel is critical for the biomass market development in Moldova. While a few years ago only several demonstration production sites were in place, currently more than 80 biomass pellets and briquettes producing companies are operational in Moldova. However, the quality of their end-product is not uniform and in many cases does not meet fuel quality standards and consumers' expectations. This situation has serious implications for the continuing positive development of the market that has been voiced by authorities, practitioners and end-consumers alike.

The issue of solid biofuel quality stems from several major factors: access to raw material, limited processing capabilities, lack of proper legal and business management practices, production and sale of biofuels, lack of coordinated producer support system to assist with R&D and know-how transfer. Add to that, lack of a coordinated governmental system to promote and support locally produced biofuels and an underdeveloped financial system. Presently, the solid biomass consumption in Moldovan has a share of about 13.1 % of gross energy final consumption. The estimated distribution by types of sources of solid biofuel sold in Moldova looks as follows: 29%

wood logs, 36% briquettes, 14% pellets and approximately 19% of raw material as baled straw and 2% sun flower husks.

To address some of these issues, the Ministry of Economy together with the relevant bodies and MEBP support has already undertaken decisive steps towards putting in place the required regulatory framework. In 2012¹, 37 fuel quality standards were transposed into national normative framework and a technical regulation was approved by the Government in 2013². The provisions of the technical regulation are mandatory for all local producers, including minimum physical and chemical characteristics of the products to be labelled as pellets and briquettes. Currently, Solid Biomass Testing and Certification Laboratory (Quality Assurance Center) is being established to fill in the missing gap of testing and certifying the products placed on the Moldovan market. The laboratory's capacity will be strengthened with technical trainings and laboratory equipment for fuel quality testing.

B. SPECIFIC CONTEXT

The solid biomass fuel producers sector started to develop very fast reaching a total number of 120 companies and in the last two years becomes evident some realities. A growing number of them are exposed to the bankruptcy risks due to lack of raw material, low efficiency of the production process, lack of business development strategy, etc. There are also often heard complaints from the consumers about the quality of the pellets and briquettes. All these are serious concerns about the sustainability of the sector. Actual tendencies show that the production capacities tend to be concentrated to several big companies whose activities do not depend only by solid biofuels production. In order to stimulate the competition on the solid biofuel market with the effect of availability of qualitative and affordable price products in all parts of the country, the companies require technical assistance.

The efficiency of the production process is one of the priority subjects that have to be approached in order to offer on the market a competitive product. Efficiency of the production process can be improved starting from the stage of collecting the biomass until the phase of delivery of the final products to the consumer. As the solid biofuel producing technologies develops continuously, the local companies needs to be informed about the latest innovations and solutions available. It is important to consider that the technical improvements within the companies have to put on the first place the safety management in solid biomass production.

All aspects mentioned above have a significant impact on the progressive development of the companies in the sector and partly miss from the day-by-day operation practices.

In an effort to build local capacities and increase the sustainability of the sector, MEBP has launched a comprehensive Training and Technical Assistance Program (TTAP) consisting of international and local components. The role of the international component is to ensure proper transfer of latest know-how and expertise, as well as share the best international practices in the field of biomass management and production. The TTAP is need-based and would seek to respond to the practical aspects of improving standard operating procedures of pellets and briquettes producers that could serve as role models for their peers in the biomass market. Therefore, a number of 35-45 companies will be invited to participate to thematic workshops and capacity building activities.

The schedule of the Training and Technical Assistance Program (TTAP) for 2016 – 2017 is the following:

Period of delivery	Trainings and TA topics	Involvement of the National Consultant on Biomass Production
10 Oct. - 14 Oct. 2016	Determining the Optimal Fuel Mix & Lab Training	NO
31 Oct. - 05 Nov. 2016	Pellet and Briquette Production	YES
28 Nov. - 02 Dec. 2016	Business Management of solid biomass production	YES
16 Jan. - 21 Jan. 2017	Application of EU Quality Standards	NO
06 Feb. - 11 Feb. 2017	Boiler Installation Training	NO
20 Feb. - 25 Feb. 2017	Biomass association/ clusters	NO

C. OBJECTIVE OF THE ASSIGNMENT AND SCOPE OF WORK

The overall objective of this assignment is to build the knowledge and capacities of Moldovan biofuel producers in solid biomass production process and safety management of the solid biofuel production. This will be achieved

¹ The list of standards establishing the criteria for determining the quality of solid biofuels in Moldova is approved by the Moldovan Ministry of Economy's Decree, No. 36 of 09.03.2016. The list is published on the following address: http://lex.justice.md/UserFiles/File/2016/mo68md/anexa_36.doc

² Government decree and regulation available at: <http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=350977>

through a series of trainings related to transfer of knowledge and know-how and by supporting and facilitating the adaptation processes by means of providing practical advice and on-the-job training.

The objectives of the ToR will be realized in two phases. In the first phase, the consultant will work closely with a team of international experts from Norway and Romania in providing trainings and technical assistance to the solid biomass producers in the period October 2016 – December 2016. The objective of this activity is to benefit from the international expertise in the solid biomass production sector, to ensure the transfer of European knowledge and know-how. When necessary, the consultant will provide inputs and informative briefs for the international experts regarding the solid biomass production processes in Moldova.

In particular, the consultant will carry out the following activities:

1. In the period of October 2016 – December 2016, take active part in the International Training and Technical Assistance Program along with the international experts and provide, upon request, specific sector information. The National Consultant on biomass Production shall mandatory participate in the following TTAP trainings and technical assistance visits:
 - A. 31.10.2016 – 5.11.2016 – *Pellet and Briquette Production training and Technical Assistance visits*
 - B. 28.11.2016 – 2.12.2016 – *Business Management of solid biomass production*
2. Prepare one topic-specific presentation for each of the above mentioned trainings. The presentation (Power Point) shall be focused on the following aspects of the Pellet and Briquette Production process:
 - Typical production routes for pellets and briquettes;
 - Technologies for sub-processes; heat production, dryers, pelletisers/briquetting machines, conveyors;
 - Biomass resources for fuel production;
 - End-product characteristics and properties; standard and custom products;
 - Product utilisation options;
 - Safety management in production process.

The second phase of the assignment - March 2017 – November 2017 – envisages that the expert will continue to provide trainings and technical assistance for the solid biomass producers building upon the first phase' experience, conclusions and outcomes, but without the participation of the international support. The objectives of this activity is to continue to provide technical assistance to solid biomass produces based on the international training methodology.

The indicative activities shall include:

3. Assessing the trainings and technical assistance needs of the target group (solid biomass fuel producers) with specific focus on solid biomass production process and safety management.
4. Based on information gathered from ITTAP in the first phase, and needs assessment, develop the content and provide 20 days of technical assistance (on-site training) and 3 regional workshops for solid biomass fuel producers on the following topics³:
 - Interlinks between biomass values chains;
 - Raw material moisture control at different stages;
 - Efficiency of the solid biofuel production process;
 - Operational control of the production process;
 - Technologies and machineries for pellet production and briquetting;
 - Performance of the equipment and maintenance;
 - Regulatory framework;
 - Packing, storage and transportation of solid biofuel;
 - Safety management.
5. Formulate recommendations for the Training and Technical Assistance Program.

D. TIMEFRAME AND EXPECTED OUTPUTS:

Deliverable /Outputs	Timeframe
1. At least one presentation (Power Point) within TTAP trainings and brief recommendation reports for all solid biomass producers visited within TA programme. Pellet and Briquette Production	31 Oct. - 5 Nov. 2016

³ Exact subjects and delivery and implementation methodology will be agreed with PMT.

2. At least one presentation (Power Point) within TTAP trainings and brief recommendation reports for all solid biomass producers visited within TA programme. Business Management of solid biomass production	28 Nov. – 2 Dec. 2016
3. Based on the TTAP trainings and TA visits, a. brief report of knowledge and skills which are currently available and b. assessment of the training and technical assistance needs provided.	15 Dec. 2016
4. Content of the training and technical assistance program materials (for second phase) prepared and approved by PMT	15 Jan. 2017
5. 20 Technical Assistance visits and 3 regional workshops for solid biomass producers conducted	15 Jun. 2017
6. Final report with specific technical recommendations to all solid biomass producers visited within TA approved	15 Jul. 2017

The estimated workload of the consultant consists of up to 40 day distributed as following: 10 days during October 2016 – December 2016 and up to 30 days during January 2017 – July 2017.

E. MANAGEMENT ARRANGEMENTS

The Consultant will work under the direct supervision of the LTSP and overall supervision of MEBP Training and Capacity Building Officer. All deliverables shall require the approval of the LTSP. MEBP Training and Capacity Building Officer will put at the consultant's disposal all available materials and necessary information for the achievement of tasks and will facilitate the meetings, as needed.

The consultant is expected to undertake frequent field trips to target beneficiaries in Moldova over the entire period of contract. Transportation for all envisaged travels will be provided by UNDP.

The payment shall be made on a daily fee basis. Payments will be released on a monthly basis based on the approved time-sheets confirming the actual volume of work performed and based on outputs delivered and accepted by MEBP during the given reporting period.

All the training logistics such as venue, accommodation for local participants, printing of training materials, other trainings related logistics and other will be prepared and ensured by the LTSP in coordination with PMT. Coordination of translation services of the training materials and hand-outs will be conducted with the PMT.

F. QUALIFICATION REQUIREMENTS

The applicant must meet the following qualification criteria:

Academic Qualifications:

- University Degree in Technical Sciences, Engineering, Mechanics, Energy and/or Agriculture, or related studies;

Working experience:

- At least 7 years of professional experience in the agriculture, energy efficiency and/or renewable sectors;
- At least 3 years of hands-on experience in solid biomass production;
- Extensive experience in training materials development and/or conducting training and capacity building activities for farmers, agricultural processors and/or solid biomass producers;

Competencies and skills:

- Demonstrated expertise in solid biomass production technologies, processes and constraints;
- Knowledge with solid biomass market development dynamics;
- Advanced training and facilitation skills, mastery of interactive participatory training techniques and adult learning methods;
- Proven commitment to the core values of the United Nations, in particular, respecting differences of culture, gender, religion, ethnicity, nationality, language, age, HIV status, disability, and sexual orientation, or other status;
- Excellent proficiency in Romanian and Russian. Knowledge of written and spoken English is an advantage.

Personal qualities:

- Excellent interpersonal and diplomatic skills, as well as the ability to communicate effectively with all stakeholders and to present ideas clearly and effectively;
- Responsibility, creativity, flexibility and punctuality.

The UNDP Moldova is committed to workforce diversity. Women, persons with disabilities, Roma and other ethnic or religious minorities, persons living with HIV, as well as refugees and other noncitizens legally entitled to work in the Republic of Moldova, are particularly encouraged to apply.