

TERMS OF REFERENCES

Job title:	National consultant to develop the statistical methodology to account for renewable energy sources and namely, solid biomass potential
Application Deadline:	August 13, 2015
Expected Duration of Assignment:	August 2015- November 2016, up to 60 working days
Reference to Project:	Moldova Energy and Biomass Project of EU-UNDP Moldova
Project Activity:	Improve availability of disaggregated statistical data – solid biomass
Contract type:	Individual Contract
Beneficiary:	Ministry of Economy, Agency for Energy and Efficiency, National Bureau of Statistics of Moldova (NBS)

A. PROJECT DESCRIPTION

Background

The first phase (2011-2014) of the Moldova Energy and Biomass Project (MEBP) with a budget of 14.56 million EUR project, funded by the European Union and UNDP and implemented by UNDP, contributed to a more secure, competitive and sustainable energy production in the Republic of Moldova through targeted support to the most viable and readily available local source of renewable energy, which is biomass from agricultural wastes.

In 2015 the Project entered 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 9.41million EUR.

To achieve its mission, EaPIC main activities are grouped into four main outputs:

- **Output 1. Municipal biomass heating and fuel supply markets established**
 This component aims at installing at least 80 additional biomass-based municipal heating systems, with focus on Transnistria, ATU Gagauzia, Taraclia district and small towns. An increased focus is on the further development of the domestic biomass fuel market in view of ensuring sustainable supply, enhanced competition between producers, application of quality standards, certification of products and end-consumer protection. *Another considerable activity within this component is the development of a modern and reliable statistical system that will account for the production, consumption and other developments of the solid biomass market.*
- **Output 2. Foundations laid for the establishment of efficient household heating and heat supply markets and private sector demand promoted**
 Under output 2, at least 300 households and/or small businesses will be supported to procure modern and efficient biomass boilers under preferential conditions. Technical and financial support will be provided for the creation of 7 new PPPs throughout the country. This will foster public-private solutions in establishing sustainable biomass-based heating services as well as efficient operation and maintenance of the systems;
- **Output 3. Capacity built for growth of biomass markets at regional and local levels**
 The capacity development activities continue to be a key component, being tailor-made and extended to Transnistria, Gagauzia and the Taraclia district, as well as to small towns. Vocational education and training (VET) sector will also be addressed. School education activities on renewable energy and energy efficiency, will be extended to target localities: small towns, Taraclia district, Gagauzia and wherever feasible in Transnistria;
- **Output 4. The opportunities and benefits of biomass energy for Moldova are well known, visibility of project results is promoted**
 Wide-spread awareness raising activities on the opportunities and benefits of biomass energy will be further facilitated, with a specific focus on increasing the uptake of renewable energy technologies in ATU Gagauzia, the Taraclia district, and the region of Transnistria. The visibility of the partnership and the impact of the action will be effectively promoted.

Specific context of assignment

The decision of an entrepreneur, whether to become active in the biofuel or biomass technologies sector (and, thus, to benefit of MEBP's assistance), critically depends on availability of reliable information on the existent volume of the raw material, including estimations of the future biomass potential preferably broken down by type of raw material and region of the country.

In the national statistics, produced by the National Bureau of Statistics, only since 2013, the share of solid biomass is included under the aggregated figures of "*bio fuels and wastes/ residues*" as one of the sources of renewable energy mentioned in the annual Energy Balance of Moldova¹, with an additional disaggregation (in the "energetic products" chapter) by 3 types of solid biomass (firewood, waste wood, agricultural waste) and purposes of its consumption. Nevertheless, these data provide limited information on solid biomass availability, consumption, production/processing by types, purposes and involved actors (data respondents include only business establishments). These limitations impede the full alignment of Moldovan statistics to EU/international standards² and diminish the level of data users' satisfaction with the required statistical information. Also, because of these constraints a series of statistical indicators required within the National Development Strategy "Moldova 2020"³ and National Programme for Energy Efficiency 2011-2020⁴ are missing.

In the first phase of MEB Project, an independent study, estimating the potential of biomass for business, was carried out. While assessments like this have to be updated periodically, there remain underlying bottlenecks which also have to be addressed, namely:

- Currently no national methodology is in place for estimating biomass potential, nor are official statistical data produced and disseminated. This leads to large discrepancies in the figures being published by different sources, ultimately creating uncertainty for entrepreneurs and impacting investment decisions;
- Lack of statistical evidence and systematic data collection tools for agricultural and wooden biomass, which would enable the coherent, regular and sufficiently disaggregated estimations of biomass potential.

Respectively, one of the main instruments of local biomass market development during MEBP's Phase II will be to establish *a modern and reliable statistical system that will measure the production, consumption and other developments of the solid biomass market*. Such a system is to be developed in compliance with EU standards and being covered by statistical methodologies and toolkits which also respond to the national needs for evidences. The new methodology would reflect on the realities of the local business and residential sectors, and present the information that could be used for all interested parties like governmental and educational institutions, investors and business communities, etc. It would reflect on the biomass market production developments and potential, its consumption patterns, market participants, etc.

B. OBJECTIVES and SCOPE OF WORK

To remove the above mentioned critical market development barrier, the UNDP Project, through contracting a local consultant, will provide support to the Moldovan Government on **development of statistical infrastructure to measure the solid biomass potential as source of renewable energy**.

The main **objective** of this assignment is to assist National Bureau of Statistics of Moldova to set up a statistical mechanism on data collection and production of official statistical indicators on available volume, consumption and production of solid biomass by both, business establishments and the residential sector (population households), for private and industrial purposes. This will consist of the full set of statistical components required for a data production process, including: the concepts and definitions, methodological framework, appropriate toolkit (consisting of questionnaires and filling-in instructions), interviewers' manual and training materials, field-visits schedule, etc.

The national consultant is to engage in elaboration of the methodological framework and toolkit for 2 statistical surveys which should comply with the EU requirements and international standards in energetic statistics. Also, the national development and regulatory framework, as well as the concerned data users' informational needs, will be taken into consideration by the hired consultant when delivering the expected outputs. Therefore, the assignment is to be undertaken in close collaboration with the National Bureau of Statistics and its conceptual guidance (as main implementer of this activity), and in consultation with the Ministry of Economy, Agency for Energy Efficiency, Ministry of Agriculture and

¹ Energy Balance of RM, <http://www.statistica.md/pageview.php?l=ro&idc=263&id=2197>

² Republic of Moldova has signed at 27th of June 2014 Association Agreement with European Union, http://europa.eu/rapid/press-release_MEMO-14-430_en.htm, according to which should harmonize all the national statistics with EU Statistical requirements compendium which is a well-established reference document for the acquis in statistics, summarizes the key reference information for European statistical production, <http://epp.eurostat.ec.europa.eu>

³ National Development Strategy Moldova 2020, http://particip.gov.md/public/files/Moldova_2020_ENG1.pdf

⁴ National Programme for Energy Efficiency 2011-2020, <http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=340940>

Food Industry, academia, private sector, etc. as it regards the definitions and concepts to be used and gathering of appropriate feedback on delivered products.

Core statistical toolkits including methodologies and questionnaires to be developed under the present assignment will have to be formally approved and adopted by the NBS Methodological Board representing its institutionalization into the national statistical system.

Scope of Work

More specifically, under the current assignment the UNDP Project, in cooperation with NBS, are looking for the following expertise on the part of the hired national consultant:

- a) To develop **statistical methodologies and toolkits** (questionnaire and supporting instructions) for 2 statistical surveys:
 1. Exhaustive statistical **survey on enterprises** and establishments to enable the data collection and production of statistics on availability, production and consumption of solid biomass by economic activities (as part of the survey on Energy Balance);
 2. Sample statistical **survey on households** to enable data collection and production of statistics on availability and consumption of biomass and other energy resources by households;
- b) To undertake the **analysis of statistical indicators produced** in the framework of both statistical surveys (on establishments and on households) contributing to dissemination of statistics on solid biomass, in a user-friendly format and manner, comprehensible to target audiences.

Sustainability of expected results

Tasks to be performed and products to be developed within this framework of this assignment will contribute to the setting of a solid mechanism for provision of regular, internationally comparable and coherent data to feed the decision and policy making in the energy field. In a medium-term perspective, statistics to be produced by NBS on a regular basis, on the basis of development methodologies and toolkits, will represent reliable evidences for monitoring and analysis of evolution and developments of national solid biomass market, its quantity and quality.

For the National Statistical System, such development interventions contribute to the improvement of the national system of statistical indicators and of information flows in the energy field of statistics. Thus, the Energy Balance of the Republic of Moldova (that includes the production, import, export and consumption of fuels by economic activities) will be filled with data regarding energetic products from renewable sources, as well as households' available biomass and consumption of solid biomass by the population. This will enable the estimation of missing indicators required within the National Development Strategy "Moldova 2020 and National Programme for Energy Efficiency 2011-2020, namely:

- 1) Share of renewable energy in gross final energy consumption
- 2) Share of biofuels in total fuels
- 3) Electricity generated from renewable sources
- 4) Renewable energy sources' contribution in electricity generation, for heating and cooling purposes⁵.

Production of these indicators would contribute to Moldova's alignment to EU standards, namely Directive 2009/28/EC on the promotion of the use of energy from renewable sources.

From the regulatory perspective, the support on improvement of primary data collection and creation of official statistical evidence on agricultural and wooden biomass in line with the elaborated methodology, might require a subsequent transposition of normative acts to the national legislation. The role of the Project will be limited to increasing awareness on the problem as well as collaboration, in the limit of the project's mandate, with local and international partners working to support National Bureau of Statistics in aligning local statistics to EU practices.

The consultant will work in close liaison with NBS staff from Energy Statistics Department and all activities should lead to capacity building of NBS to achieve their goals under Annual Plan of Statistical Works, NBS Strategic Development Programme and in compliance and under full mandate of Law on Official Statistics.

Tasks and Activities to be performed

Under the overall supervision of the UNDP, in partnership with NBS, the consultant is expected to perform the following activities:

1. Analysis of background and reference materials:

⁵ The same indicators are produced by Eurostat for EU (http://ec.europa.eu/eurostat/statistics-explained/index.php/Renewable_energy_statistics)

- Undertake a review of studies on biomass potential developed so far, taking care of the biggest discrepancies and inaccuracies among them. This will provide a clear picture on the weaknesses of data collection per type of biomass and will set the baseline for the work on improving data collection and assessment methodology;
- Get acquainted with the national policy framework in the areas of concern for the present assignment, as well as, with the European Code of Practice in statistics;
- Propose own approach for the expected activities and detailed work plan that encompasses the above-mentioned objectives and discuss them with Project stakeholders;

2. Review the available statistical questionnaires and methodological notes on business survey and international recommendations and practice on households' survey

- Mapping of available data on energy statistics collected from enterprises will be carried out at the first stage and data gaps versus current national policy framework will be identified;
- The content of statistical questionnaires on enterprises and households, as well as definitions, concepts and methodological guidelines available in the country and internationally, will be analysed from the perspective of their relevance, appropriateness and compliance vis-à-vis the European Code of Practice, EU requirements on statistics related to renewable energy sources (including biomass) and the current needs of the national stakeholders and related regulatory framework (mentioned above);
- The national definitions, concepts and corresponding classifications will be also subject to review from the perspective of their compliance and harmonisation with international standards and norms;
- Consultations with the data providers (respondents) and users of expected statistical information on solid biomass will be undertaken to determine the actual purpose of use of such data, level of satisfaction with it and needs for new improvements, updates and completion. Stakeholders to be consulted in this respect are: Ministry of Economy, Ministry of Agriculture and Food Industry, Ministry of Environment, Agency for Energy Efficiency, Research Institute for Energy, academia and others
- Undertake the analysis of the information flows regarding the described questionnaires on the basis of which data are collected at present.
- Draft an **inception report** on the results of desk review (consisting of activities 1-2) representing a brief information regarding current availability of statistics related to solid biomass (in the official statistics and from independent sources), the additional data needs to be met for national and international purposes, and EU/international requirements to be taken into consideration for assignment's execution. Report will contain 2 parts, according to types of surveys to cover (on households, enterprises).

3. Development of a methodological framework for the surveys on private households and legal enterprises

- Formulate and agree with NBS the basic principles of both surveys – their objectives, coverage, reference period, data collection method, sampling, etc.

survey on households - It is expected that the questionnaire of survey will be tested on at least 100 households and the full survey's sample will cover not less than 3000 households (numbers to be confirmed by the national consultant) and should be sufficient to ensure the representativeness of solid biomass production and consumption in private households at national and regions' levels, as well as other basic characteristics of households (urban/rural, size of household, sex of household's head, etc.),

survey on enterprises and establishments - it is an exhaustive survey covering all the enterprises which produce resources of renewable energy and the consumers of such energy.

- Develop the **methodologies** of both surveys;
 - The respective documents will contain the methodological principles on the basis of which the surveys will be conducted, as well as exact instructions regarding the application of these principles. It will also contain recommendations on the quality control procedures to be applied during data processing activities;
- Design the surveys' **questionnaires** (Romanian & Russian) for private households and legal enterprises;
 - The questionnaires will pursue the objectives and principles described in the methodologies and comply with the corresponding statistical requirements.

survey on households - the clarity of questionnaire will be tested on at least 100 households, the questionnaire will be accompanied by the survey's manual (in Romanian and Russian) to be used by the interviewers involved in field data collection;

survey on enterprises and establishments - questionnaire will be tested on at least 10 establishments for the and establishments. The questionnaires will be accompanied by filling-in instructions (in Romanian and Russian)

Ultimately the methodologies and questionnaires for both surveys will be approved by the NBS methodological Board.

- Advise NBS on the data processing program/software, in particular the output variables and tabulations to be produced on the basis of processed data in the framework of both surveys (consultant's collaboration with the IT expert is envisaged).

4. Development of two analytical reports on conducted surveys

- The reports will include the analysis of obtained data and interpretation of statistical indicators resulted from both surveys on private households and legal enterprises. The content of each will be focused on:
 - for **survey on households** – the level of households' biomass consumption by purposes (e.g. heating, cooking, etc.), its share in the total energy consumption, volume of biomass available and produced in the households, sources of biomass, availability and use of renewable energy systems by types, opinions on dis/advantages and benefits from using of biomass, expenditures for biomass use, etc.;
 - for **survey on enterprises and establishments** - biomass available with enterprises in the country, production of pellets and briquettes by the establishments and consumption of solid biomass by economic activities, etc.;
- At general, the **reports** will describe core characteristics of observed groups (households/enterprises), differences and similarities inside the targeted groups (by types of households, by economic activities of enterprises, etc.), factors and determinants causing the observed status of affairs in the field of solid biomass consumption, use and production, complemented by international (data-based) comparison, conclusions and recommendations, other elements;
- For meaningful knowledge sharing, expected reports should be of high quality with a clearly identified audience, aimed to improve the understanding of analyzed issues, written in clear and easily understandable language and communicated in user-friendly format containing graphical representation of information. Reports (from 5 to 15 pages each excluding annexes, depending on the topic's complexity and evidence availability) will be agreed with NBS and UNDP and delivered as ready (off-the-shelf) materials for dissemination;

5. Other activities:

- **Consultations** with the data providers (respondents) and users of expected statistical information on solid biomass will be undertaken at all stages of assignment implementation through collection of their feedback to ensure the full response to users' informational needs;
- Participate in **public presentation** of produced outputs (methodological toolkit, reports on analysis of surveys' results) which tentatively might include: (i) presentation in a public event/s for target stakeholders; (ii) dissemination via NBS web page (iii) or via other means suggested/facilitated by Applicant (e.g. media, etc.);
- Develop the **activity narrative report** on undertaken consultancy, including stages passed, resources used, results obtained versus expected, impact of obtained results, stakeholders involved/consulted, risks overcome, problems faced, lessons learned, conclusions and follow-up recommendations for NBS and the Project partners.

C. DELIVERABLES and ESTIMATED TIMEFRAME

Performing the mentioned above activities, the consultant will be responsible for delivering of the following outputs, comprising the main milestones:

Deliverables	Tentative timeframe from contract date
1. Working approach and detailed action plan aimed to achieve assignment's objectives	20.08.2015
2. Inception report , on the results of desk review, regarding current availability of statistics related to solid biomass and additional needs to be met, EU/international requirements to be followed	31.08.2015
SURVEY ON HOUSEHOLDS:	
3. Draft Statistical toolkit , including methodology, questionnaire, interviewers' manual	15.09.2015
4. Final Statistical toolkit (after testing in the field and consultation with stakeholders)	10.02.2016
5. Analytical report on survey's results (after consultation with stakeholders)	30.08.2016
SURVEY ON ESTABLISHMENTS:	
6. Draft Statistical toolkit , including methodology, questionnaire, interviewers' manual	15.09.2015
7. Final Statistical toolkit (after testing in the field and consultation with stakeholders)	25.10.2015
8. Analytical report on survey's results (after consultation with stakeholders)	30.08.2016
9. Narrative report on undertaken assignment and handouts for public presentation of outputs to the key stakeholders	20.09.2016

All the deliverables should be agreed with NBS & MEB Project staff and be provided in hard and/or electronic copy.

D. ESTIMATED DURATION OF THE CONTRACT

The activities under the present assignment are expected to commence at the beginning of August **2015** and be completed by **end of September 2016**. The volume of consultancy has been estimated to up to **60 working days overall per whole assignment** (full days of 8 hours) (*could be changed if correspondingly justified*) during which all the activities and outputs/results envisaged under the present assignment are expected to be performed.

Note: The mentioned number of working days has been estimated as being sufficient/ feasible for the envisaged volume of work to be completed successfully and is proposed as a guideline for the duration of assignment, and it cannot be used as criteria for completion of work/assignment. The provision of envisaged deliverables approved by the Project partners and concerned national stakeholders would be the only criteria for the Contractor's work being considered completed and eligible for payment/s.

E. MANAGEMENT ARRANGEMENTS:

Organizational Setting: The consultant will work in close cooperation with the Business Officer –Business and Capacity Development and under the overall guidance of the Project Manager of MEBP.

Contributions: MEBP will put at the contractor's disposal all available materials and necessary information for the achievement of tasks and will facilitate the meetings, as needed.

The success of given activity can be ensured only by team work of all partners involved via active participation at all the stages of the assignment and the contracted consultant should play the role of guarantor of these joint effort.

The contracted consultant will ensure a high level of analytical support, efficient communication and cooperation with the Project and national relevant institutions (NBS, Ministry of Economy, etc.).

F. REQUIRED SKILLS AND QUALIFICATIONS

The consultant is expected to comply with the following qualification criteria:

Education:

- University **degree** in statistics, economics, sociology and/or other science related to areas of assignment;
- A lower Degree combined with 7 (seven) years of relevant professional experience will serve in lieu of University Degree

Experience:

- At least 5 years of professional **experience** in the areas related to **statistics**;
- **Experience** related to **methodological work** (development of methodologies for calculation of indicators, designing of questionnaires, research articles, thematic analysis, assessments, evaluations, reviews, policy advise, legislation adjustments, etc.)
- Practical experience in development of analytical papers including the **use of statistical data**, evidences and informative materials;
- Experience in energy or related statistics (collection and/or production) (*would be an asset*);
- Experience of collaboration with **Government institutions**, preferably in area/s relevant for the present assignment;
- Experience in working with **development partners** and UN agencies in particular

Competencies and Skills:

- Knowledge and **practical** experience of **work** with statistical analysis software (SPSS, STATA) and ability to work with large datasets, on-line web-based applications (*would be an asset*);
- Familiarity with the **national context** (legal and policy framework) related to the areas of assignment concern and international practice;
- Excellent proficiency in Romanian and Russian. Knowledge of written and spoken English is an advantage
- Ability to analyse, plan, communicate effectively orally and in writing, draft reports, solve problems, organize and meet expected results, adapt to different environments (cultural, economic, political and social);

Personal Qualities and other requirements:

- Good interpersonal skills, solid judgment/decision making, initiative and creativity;
- Availability to work with UN and Project's national stakeholders during the indicated/approved period;
- 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. Adherence to UN's values and ethical standards.

Institutional arrangements

The National Consultant is expected to work in a close cooperation with the national counterparts at the National Bureau of Statistics (Energy Statistical Division), listed above implementing partners/stakeholders and UNDP staff, and regularly keep them updated on the progress.

The Project and their national partners will be supporting the National Consultant by nominating the responsible persons on behalf of each partner and providing him/her with the relevant regulatory acts, results of previous work, and with the guidelines on the legal and institutional framework of the partner institutions thus ensuring that the undertaken assignment conforms with sectorial and national priorities.

Payments will be disbursed in installments upon Project's acceptance on delivering of the contract obligations, services and products in a satisfactory manner. The Consultant may be provided office space in the Project's premises if needed. The Project will facilitate access to relevant information and the necessary meetings.

Performance Evaluation

Contractors' performance will be evaluated against such criteria as: timeliness, responsibility, initiative, communication, accuracy, and quality of the products delivered.

Travel Requirements

During the contract period no travel is required.

G. SUBMISSION OF PROPOSAL

The submission package will consist of:

1. Technical Proposal explaining how applicant responds to each of the qualification requirements and why he/she is the most suitable for the work, as well as a short vision on achievement of tasks;
2. Personal information (as a detailed CV or as a Personal History Form /P11) including records on past experience in similar projects/assignments and concrete outputs obtained;
3. Financial proposal (in USD, specifying a total lump sum amount and the number of anticipated working days).