

**Development and Commercialization of Bioenergy Technologies in the Municipal Sector in Ukraine**

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| **C:\Users\Наталия\Documents\Recruitment documents\Biomass 2016\Reports\Рисунок1.jpg** |  | *У Молодові перші плантації енергетичної верби висадять профтехучилища* |
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**Project Progress Report 2017**

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**Kyiv 2017**

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## Annotation

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| Project Title | Development and Commercialization of Bioenergy Technologies in the Municipal Sector in Ukraine |
| Country | Ukraine |
| UNDP PIMS ID:  GEF Project ID: | 2921  4377 |
| Reporting Period | January – December 2017 (12 months) |
| Donor | The Global Environment Facility (GEF) |
| Funding Source | GEF Trust Fund |
| Responsible Party | United Nations Development Programme |
| Implementing Partner(s) | United Nations Development Programme |
| Project ID (Atlas):  Outputs ID (Atlas): | 00074537  00086891 |
| Project Start Date | 24 June 2014 |
| Project End Date | 23 June 2018 |
| GEF grant | 4,700,000.00 USD |
| Co-financing | 30,057,500.00 USD |
| 2017 Annual Work Plan Budget | 855,248.00 USD |
| 2017 Annual Delivery | 704,042.00 USD |
| Total project expenditures as of 31.12.2017 since the project start | 3,199,014.00 USD |
| UNDP Project Manager | Mr. Volodymyr Lyashchenko, Project Manager |
| UNDP Contact Person During 2017 | Mr. Sergei Volkov, Senior Programme Manager, UNDP Ukraine  Mrs. Olena Maslyukivska-Samberg, Programme Analyst, UNDP Ukraine |

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## Purpose of the Report

This report represents a narrative Annual Status Report of the project “Development and Commercialization of Bioenergy Technologies in the Municipal Sector in Ukraine”. This report is not mandatory within the UNDP-GEF project implementation framework, given the Annual Project Review/Project Implementation Reports (APR/PIR) combining both UNDP and GEF reporting formats is a key report under monitoring and evaluation requirements for this project prepared annually to monitor progress made since project start and in particular for the previous reporting period (30 June to 1 July).

Being supplementary progress report, it is aimed at providing more detailed description and analysis of the project implementation progress, results achieved, challenges encountered, lessons learned and outlook for the future. This report is structured using the donor reporting template applicable to projects that receive non-core resource contributions through third party cost sharing agreements.

## Acronyms

ATLAS Corporate business platform of UNDP

AWP Annual Work Plan

CO Country Office

EE Energy efficiency

FSM Financial Support Mechanism

GCal/h gigacalories per hour

GEF Global Environment Facility

IFC International Finance Corporation

NGO Non-Governmental Organization

Mtoe Million Tonnes of Oil Equivalent

MTR Midterm Review

PIU Project Implementation Unit

RES Renewable energy sources

SAEE State Agency for Energy Efficiency and Energy Savings of Ukraine

toe tonne of oil equivalent

ToR Terms of Reference

UNDP United Nations Development Programme

USD United States Dollars

# Executive summary

**Country context**

After adoption of the National Renewable Energy Action Plan until 2020 in 2014, biomass is being considered a primary renewable fuel for replacing expensive imported natural gas in the district heating. Bioenergy is expected to contribute to over 4/5 of the total renewable energy consumption in the heating sector replacing some 7,2 billion m3 of natural gas annually by 2020.

Bioenergy as a whole now replaces about 2,6 billion m3/year of natural gas that is only about 10% of the total available biomass resource potential in Ukraine. However, with the improved biomass regulation framework in 2017, it can be expected that bioenergy targets may be met as expected.

In 2017 a number of laws were adopted having reinforced the legislative/regulatory framework for renewable energy implementation, including biomass, as well as encouraging replacement for natural gas with other energy sources.

**The project context**

Overall in 2017 the Project has made a good progress towards achieving its development objective of wide utilization of bioenergy for municipal heat and hot water supply purposes. The Project primarily supports utilization of cereals straw and other agricultural residues for municipal heating purposes, which is now used for about 2,5% of its total available resource potential.

In summary during 2017:

* Five pieces of legislation based on the Project recommendations were adopted by the Parliament.
* The Interagency Bioenergy Working Group has been established and “operationalized” under the Ministry of Ecology and Natural Resources of Ukraine.
* In close cooperation with the IFC and Ukraine’s second largest state-owned bank “Oshchadbank”, the Project has developed a commercial Financial Support Mechanism (rather than one based on grants or other forms of subsidized lending) that includes legal, financial and technical aspects to encourage commercial lending to municipalities for financing biomass and energy efficiency projects.
* 3 Oblasts of Ukraine has included Biomass Targets to their Energy related strategic documents.
* Biomass multi-audience Info-kit has been developed.
* Awareness and Capacity Building Training Campaign has started.

There are still challenges and delays:

* The Financial Support Mechanism established under the project has not been operationalized as planned in July 2017 mainly because the development path for municipal bioenergy and energy efficiency projects has been prolonged in line with the recent legislative changes related to urban development and construction that came into effect in June 2017.
* Four out of seven pilot oblasts have not adopted Biomass targets yet.
* Monitoring & Evaluation of the operation of pilot projects is yet to start.

# Background

## Project genesis

The formulated full-sized project aimed at “Development and Commercialization of Bioenergy Technologies in the Municipal Sector of Ukraine” with the GEF-funded budget of 4,700,000 USD and committed co-financing for over 30,000,000 USD was approved by GEF in early 2014 and the officially started on 24 June 2014.

UNDP Ukraine is implementing the project directly using UNDP Direct Implementation Modality; however, in line with the established procedure of state registration of international technical assistance projects, the State Agency on Energy Efficiency and Energy Saving of Ukraine (which is currently the main state institution responsible for the implementation of renewable energy policy) has been defined as the project beneficiary and participates in the Project Board.

Other Key project partners include: the Ministry of Ecology and Natural Resources of Ukraine, the Ministry of Regional Development, Construction, Housing and Communal Services of Ukraine, relevant parliamentary committees, the World Bank Group, target municipalities and regions.

In 2014 the project kickoff activities mostly took place, and only following the engagement of the Project Manager in September 2014 and holding of the Project Inception Workshop on 19 November 2014 the actual implementation of the project has begun.

The year 2015 was quite challenging for the project implementation due to various political transformations in Ukraine that caused serious changes in the national institutional context affecting the project design, partnership arrangements and progress. There were delays with the project’s Component 2 (biomass market development through support of the Biomass Support Unit) and partially Component 3 (Financial Support Mechanism – FSM) due to major institutional changes within the state executive bodies (ministries) and liquidation of the initially selected partner for the FSM development and implementation.

In 2016 all project components were addressed to a greater or lesser extent with good progress achieved under Components 3 and 4, and modest progress under Component 1 and 2 due to external factors affecting the project implementation.

**COMPONENT (ACTIVITY) 1:** Market-oriented policy and legal/regulatory framework.

This activity aims to formulate and introduce a streamlined and comprehensive market-oriented policy and legal/regulatory framework (“macro level” activities) to promote municipal biomass for heat and hot water services in the country, which includes national/municipal targets for biomass energy for heating.

**Situation analysis at the beginning of 2017:**

With little exception, there is no separate bioenergy regulatory framework – bioenergy is developed within renewable (or alternative – more frequently used term in Ukrainian legislation) energy framework and included in renewable energy targets. The use of biomass for municipal energy purposes is regulated by numerous (in total over 100) heating-related and municipal services (housing and utilities) related laws, making it a lengthy process to bring changes as amendments and improvements are required to many laws. Moreover, the "average" time to have the law enacted (to pass in Parliament) is about 1-1,5 years, and in some cases events can overtake the original intent or purpose.

The process of legal/regulatory framework review has started by the project in 2015. During 2015 a team of 12 project’s experts thoroughly analyzed the existing legal framework regulating bioenergy utilization in the municipal sector in Ukraine, as well as the EU Energy Directives to be implemented in Ukraine. As an outcome substantive changes/amendments to the selected current legislation to support utilization of bioenergy technologies for heat and hot water supply in the municipal sector have been suggested and submitted to the Ministry of Regional Development, Construction, Housing and Communal Services and State Agency on Energy Efficiency and Energy Saving of Ukraine in a form of 8 draft laws. Specifically, amendments were proposed to the following laws: the Budget Code of Ukraine, the Law of Ukraine «On energy saving», the Law of Ukraine «On heat supply», the Law of Ukraine «On alternative energy sources», the Law of Ukraine «On housing and communal services», the Law of Ukraine «On the priority of social development of villages (rural areas) and agricultural sector in the national economy», the «Energy Strategy of Ukraine for the period until 2030», the «National Renewable Energy Action Plan until 2020» (*please see Project Annual Reports 2015 and 2016 for details).*

Further, amendments proposed by the Project served as groundwork for draft laws submitted to the parliament for consideration. Here a brief insight into Ukrainian lawmaking is necessary: according to the Constitution, the President, the Members of Parliament, and the Cabinet of Ministries of Ukraine have the right of the legislative initiative. The law adopted by the Verkhovna Rada (Ukrainian Parliament) goes to the President for signing and further official publication. The President may either sign the new law, or use the right of veto and return it to the Verkhovna Rada with propositions for additional considerations. The Verkhovna Rada may overrule the President’s veto by two-thirds of constitutional membership. The law comes into force in ten days after the date of its official publication (unless otherwise stipulated by the law). Therefore in various project reports we see that various draft laws containing the Project recommendations were introduced into the parliament. Once adopted and signed by the President, these drafts are assigned a new number and sometimes a new title. In some cases the law was adopted by the Parliament but has awaited the President signature for quite a long while.

It is also worth mentioning that the majority of energy-related laws have been introduced into the Parliament by a group of people’s deputies (members of Parliament) rather than by the Government, therefore cooperation with Parliamentary committees is of utmost importance. The Project cooperates with the Parliamentary Committee on Environmental Policy, Nature Resources Utilization and Elimination of the Consequences of Chornobyl Catastrophe.

In 2016 the project was instrumental in supporting policy development activities aimed at prioritizing bioenergy deployment. Upon request of the State Agency on Energy Efficiency and Energy Saving of Ukraine the Project developed the Detailed Bioenergy Roadmap to support implementation of the National Renewable Energy Action Plan until 2020.The Roadmap (available in Ukrainian on the project website <http://bioenergy.in.ua/uk/library/korisni-materiali/dorozhnia-karta-z-rozvitku-tverdogo-biopaliva-ukrayini/>), gives a detailed strategic analysis of the (solid) biomass market situation and prospects in Ukraine. Based on the vision formulated in the “concept” bioenergy roadmap prepared by the project in 2015, the Roadmap specifies the tasks stated in the National Renewable Energy Action Plan until 2020 taking into account existing resource base and defined measures necessary to achieve the biomass utilization objectives.

At the regional level the Project envisages that biomass energy targets in heating are developed, agreed and adopted for at least selected pilot oblasts (regions). In 2016 biomass energy targets were set for 7 pilot oblasts (Poltava, Ivano-Frankivsk, Zakarpattia, Volyn’, Dnipropetrovsk, Zhytomyr and Cherkassy) under the formulated Regional Biomass Programmes. These Regional Biomass Programmes provide for a systematic approach to the transition from the traditional district heating system to a modern and efficient system that involves the use of available local biomass fuels instead of imported natural gas. The Programmes describe the current situation with energy consumption in the regions, analyze local biomass potential, and suggest activities, measures, monitoring and quality management approaches to ensure prompt introduction of bioenergy technologies in the regions. By the beginning of 2017 all the developed Regional Biomass Programmes have been submitted to and discussed with respective local authorities, pending approval by local councils.

**Planned actions/activities for 2017:**

* 1. Provide technical support to facilitate the adoption of 7 Regional Programs on Biomass Utilization for heat and hot water supply (in Zakarpattia, Volyn, Ivano-Frankivsk, Dnipropetrovsk, Zhytomyr, Cherkassy, Poltava oblasts).
  2. Support the enforcement of biomass policy framework through facilitating legislation changes/amendments, including through legislation review and provision of recommendations, organization of public and professional discussions and follow-up on the adoption of the proposed in 2015 changes/amendments to the laws and regulations applicable to biomass energy development.
  3. Attract expertize to develop market oriented policy to promote municipal biomass utilization for heat and hot water supply services.

**COMPONENT (ACTIVITY) 2:** Capacity available within relevant national bodies to support development and implementation of a municipal biomass programme through the establishment of a Biomass Support Unit or alternative arrangements.

**Situation analysis at the beginning of 2017:**

The project component 2 turned to be the most challenging one, as according to the initial strategy outlined in the Project Document, the project was to develop relevant capacity within the Ministry of Agrarian Policy and Food of Ukraine, which, however, after political and institutional transformations in Ukraine occurred in 2014 has almost no authority to lead and manage a Biomass Support Unit. Thus the Project has been left without a key partner. In fact, the institutional framework of the biomass energy is scattered amongst several government agencies/ministries: Ministry of Regional Development, Construction, Housing and Communal Services, Ministry of Ecology and Natural Resources,Ministry of Energy and Coal Industry, Ministry of Agrarian Policy and Food of Ukraine, Ministry of Economic Development and Trade, State Forest Resources Agency of Ukraine, State Agency for Energy Efficiency and Energy Savings of Ukraine, State Service of Ukraine for Geodesy, Cartography and Cadastre.

In view of the above major change and inability to establish a Biomass Support Unit under any of the state level stakeholders (primarily because of their limited authority), the Project suggested to establish an Interagency Biomass Working Group under the possible leadership of the Ministry of Regional Development, Construction, Housing and Utilities of Ukraine involving few key state executive bodies (the idea was presented and discussed during the First Project Board meeting held on 16 June 2015.) However, at the beginning of 2017 the suggested institutional arrangements have not been in place yet.

Meanwhile the Project has provided expert support to the Renewable Energy Working Group established on 08.12.2015 under the State Agency on Energy Efficiency and Energy Saving of Ukraine. This working group is not a full alternative to the Biomass Working Group or the Biomass Support Unit, but its mere existence is an important step to facilitate shaping state policy towards biomass utilization.

**Planned actions/activities for 2017:**

1. Identify, initiate and pursue, to the extent possible, cooperation with the key stakeholders across the Government to encourage them participate in and /or contribute to the establishment and functioning of the Interagency Bioenergy Working Group.
2. Help develop Regulations for the Interagency Bioenergy Working Group.
3. Provide advisory and organizational support (as appropriate) for the establishment of an Interagency Bioenergy Working Group.
4. Provide technical and expert support to the Interagency Biomass Support Working Group.
5. Analyze international experience and best practices regarding methodological approaches for estimating GHG reduction by substitution of fossil fuels with solid biomass in the municipal sector.
6. Analyze GHG emissions estimations from solid biomass according to the National GHG Inventory of Ukraine and IPCC 2006 Guidelines for national inventories.

**COMPONENT (ACTIVITY) 3:** Financial Support Mechanism and Pilot Projects.

This activity is aimed to promote investments in municipal biomass through the establishment/strengthening of a Financial Support Mechanism (FSM) within financial institutions.

**Situation analysis at the beginning of 2017:**

The Project is to facilitate the removal of the key barrier to wide biomass deployment – availability of financial resources for municipalities to carry out infrastructure modernization, as the municipal lending in Ukraine has been almost non-existent since 2013. To help provide access to finance for implementing municipal biomass projects, the Project is to set and strengthen a Financial Support Mechanism (FSM). Originally, the project document envisaged the plan to establish the FSM in cooperation within the state-owned DerzhZem bank. However, political and institutional reforms in Ukraine in 2014 led to the liquidation of the DerzhZem bank following the Law “On amendments to some legislative acts of Ukraine (about functioning of the DerzhZem bank)” adopted by the Ukrainian Parliament in June 2014 and subsequent Government decision taken in September 2014. A new partner needed to be chosen to establish and implement the FSM, as the operating procedures of UNDP meant that UNDP could not directly manage the FSM.

During 2015 UNDP sought to identify a new partner for the FSM implementation and engaged an International Consultant to help with this task. As an outcome of the consultations and analysis, in late 2015 the negotiations have started with the International Finance Corporation (IFC) office in Ukraine to involve it as the FSM development and implementation partner because a sustainable mechanism could be launched either by a Ukrainian bank or banks or by a reputable international financial institution. Being the part of World Bank group, IFC is the only UN sister agency that possesses a high-level professional expertise in the state/private sector finance and could provide this knowledge to other UN family members within an interagency partnership. IFC correspondingly has an extensive experience in development of such type of FSMs in the RBEC region and in Ukraine in particular. As a result of the advanced discussions a local financial institution – the state-owned bank “Oshchadbank” (the second largest bank in Ukraine with over 6000 branches) has been selected as a partner for launching a financial product that is meant to be a key result of the FSM.

After a year-long negotiations and lengthy legal disputes between UNDP and World Bank (IFC) legal offices on the format and details of the agreement, the IFC has been finally engaged via the International Bank for Reconstruction and Development (also a part of the World Bank group) under the Agreement for the Banking products for EE projects Externally Financed Output signed between the United Nations Development Programme and the International Bank for Reconstruction and Development in December 2016.

Promotion of biomass utilization for municipal heat and hot water supply has been another important task of the project. During 2015-2016, 12 biomass demonstration projects were implemented in 3 pilot regions and 12 straw-fired boilers with 220 kW thermal capacities installed and started operation. GHG emissions reduction resulted from the biomass projects implementation so far equals to 2,889 t CO2 or 72,228 t CO2 within the estimated lifetime of the installed equipment (20 years).

Additionally, 3 pilots on creation of energy crops nurseries (3 energy willow mother plantations of 5 hectares each) in three regions of Ukraine with different climate and soil characteristics were implemented during March-November 2016 in cooperation with the GEF Small Grant Programme and local environmental NGOs to promote commercial cultivation of energy crops among local farmers and land-owners. These 3 pilots are important because they have showcased opportunities for energy crop cultivation and provided valuable input from the lessons learnt on the ground for further development. The information gathered from these pilots was used to feed in the ‘Regional Biomass Programmes’ developed under the Project Component 1. At the national level, the purpose of the pilots has been to demonstrate that biomass planting is a feasible endeavor worth pursuing; and that it can be upscaled at a commercial level and play a potentially significant role in helping Ukraine meet its energy and heating needs.

**Planned actions/activities for 2017:**

1. Develop and launch Financial Support Mechanism in cooperation with International Finance Corporation.
2. Provide technical assistance to pilot projects (municipalities) within implementation of the financial support mechanism.
3. Organize all-Ukrainian Awareness and Capacity Building Campaign to accelerate sustainable biomass utilization for heat and hot water services.

**COMPONENT (ACTIVITY) 4:** Outreach programme and dissemination of project experience/best practices.

This activity is to formulate an outreach programme and document/disseminate project experience/best practices/lessons learned for replication within the country (and in the region).

**Situation analysis at the beginning of 2017:**

In 2015 the Project formulated the National plan for implementing outreach/promotional activities to support biomass projects targeting domestic (and international) investors. The Plan detailed the necessary data compilation/analysis, research and awareness activities to be carried out by the Project.

In 2016 one of the key outputs under the Component 4 has been produced – A Municipal Biomass Guide detailing a step-by-step approach for implementing municipal biomass programmes. This practical manual (available in Ukrainian on the project web site <http://bioenergy.in.ua/uk/library/korisni-materiali/praktichnii-posibnik-vikoristannia-biomasi-u-munitsipalnomu-sektori/>) highlights the biomass utilization situation and legal/regulatory framework; describes opportunities for the biomass utilization in the municipal heat and hot water supply sector; analyses land-use issues; deals with feasibility analysis requirements, business plan methodology, design, construction and operation requirements for bioenergy facilities; and also gives insight into standardization of services provided by bioenergy facilities and principles for tariff regulation for energy generation and supply from bioenergy facilities; analyses monitoring and operational responsibility and liability issues.

During 2016 the Project also compiled the following analytical reports:

* Analytical Report and Recommendations on energy crops cultivation in Ukraine
* Brochure on bioenergy technologies utilization in the municipal sector in Ukraine
* Analytical Report on tariff and price regulation for heat and hot water supply in the municipal sector in Ukraine
* Comprehensive Study of Ukrainian biomass boilers market
* Comprehensive analysis of the Ukrainian biomass pellets market

In line with the National plan for implementing outreach/promotional activities, in 2016 the Project has developed a concept and launched a tender for organizing and implementing Awareness and Capacity Building Campaign primarily focused on trainings and informational campaign among municipal authorities and specialists to promote use of agricultural biomass for heating and hot water services.

**Planned actions/activities for 2017:**

1. Start implementation of all-Ukrainian Awareness and Capacity Building Campaign.
2. Distribution of the Municipal Biomass Guide and Best Practices of bioenergy technologies utilization in the municipal sector of Ukraine.
3. Document best practices and lessons learned of bioenergy technologies available in Ukraine.
4. Organize annual biomass conference in cooperation with the project beneficiary.

## Midterm Project Review results and revised Project strategy for 2017-2018 and beyond

**Midterm Project Review (evaluation)**

In line with the GEF Monitoring and Evaluation Policy, the Project underwent a Midterm Review (MTR) started in December 2016 and completed on 29 March 2017 after acceptance of the MTR report.

Concise summary of the MTR report states the following findings and conclusions:

* *The Project has made all stakeholders engaged in the process aimed at the achievement of the planned outcomes and outputs.*
* *The Project has widely applied programmatic approach and widened the area of Project influence from municipal to the Regional levels.*
* *A strong and innovative aspect of the project is the financial support mechanism which is being developed with IFC. IFIs, local banks are interested in financing municipal biomass energy projects and are ready to cooperate with the UNDP in establishing of FSM. However, the Project has to further provide TA.*
* *The Project has prepared a number of outreach material; some of them are published and found by stakeholders very useful.*
* *The Project objective and outcomes are on target to be achieved. However, in order to achieve the end-of-project targets without significant shortcomings the efforts, it is recommended to implement the following recommendations.[[1]](#footnote-1)*

**The overall project rating by the MTR is “Moderately Satisfactory”.**

**Overall rating for Project Implementation and Adaptive Management is “Satisfactory”**

**Overall rating for sustainability is Moderately Likely, i.e. moderate risks, but expectations that at least some outcomes will be sustained due to the progress.**

**The MTR also provided 10 key Recommendations** related to the achievement of the project outcome results, sustainability and project implementation/adaptive management

**Recommendations are summarized in the Table below:**

|  |  |
| --- | --- |
| Recommendation | Entity Responsible |
| **Outcome 1:** |  |
| Recommendation 2[[2]](#footnote-2): Provide Technical Assistance in the development of the National Programme / Action Plan on use of biomass energy in municipal services | Team |
| Recommendation 9: Intensify cooperation with the stakeholders (Verkhovna Rada, Bioenergy Association of Ukraine, Ukrainian Pellet Union, all-Ukrainian association of local self-governments "Association of Ukrainian Cities" | Team |
| **Outcome 2:** |  |
| Recommendation 7: Provide assistance to the municipalities – signatories of Covenant of Mayors | Team, Board |
| **Outcome 3:** |  |
| Recommendation 1: Provide further assistance to the Financial Support Mechanism | Team, Board, FSM |
| Recommendation 3: Conduct Monitoring & Evaluation of the operation of pilot projects | Team, FSM |
| **Outcome 4:** |  |
| Recommendation 4: Intensify Outreach programme and dissemination of project experience/ best practices/lessons learned | Team, FSM |
| **Project Implementation & Adaptive Management** |  |
| Recommendation 5: Re-allocate the remaining funds for the hard components of the pilot projects to the TA | Team, Board, CO |
| Recommendation 8: Consider Baseline methane emissions in the GHG reduction calculation | Team |
| **Sustainability** |  |
| Recommendation 10: Revise the Project Results Framework and the Exit Strategy | Team, Board, CO |
| Recommendation 6: Extend the duration of the Project by 21 months until the end of 2019 | Team, Board, CO |

The MTR confirmed the altered and changing environment in which the Project is being implemented (political changes, liquidation of DerzhZem bank, Ministry of Agrarian Policy and Food of Ukraine unable to host a Biomass Support Unit etc.) that caused not only changes of the status of risks but corresponding management responses to mitigate risks; and these management responses should be reflected in the Project Results Framework, which has been recommended to be revised accordingly.

Other recommendations prompt to intensify the project activities crucial for achieving its development objective to significantly increase the use of biomass energy as a fuel source for heating and hot water services in the municipal sector in Ukraine. Moreover, to ensure sustainability of the project interventions it has been recommended to extend the project duration until the end of 2019.

Almost all recommendations have been duly addressed within the first three month after the MTR completion, in particular:

- Project results framework has been revised (according to the MTR recommendation #10) and a request for the non-cost extension of the project for 18 months (the MTR recommendation #6) has been submitted in August 2017 to UNDP-GEF HQ;

- Under the Outcome 1, the work has continued with the State Agency on Energy Efficiency and Energy Saving of Ukraine and the Ministry of Ecology and Natural Resources of Ukraine and other stakeholders to develop the National Strategic document on the use of biomass (the MTR recommendation #9 and #2);

- Under the Outcome 2, the project has started work on the development of a relevant methodology of GHG reduction calculation resulted from fossil fuels substitution by biomass (the MTR recommendation #8);

- Under the Outcome 3, assistance has been being provided and further planned to operationalize and implement the Financial Support Mechanism (the MTR recommendation #1);

- Under the Outcomes 3 and 4 the marketing and outreach has been intensified (the MTR recommendation #4) with Awareness and Capacity Building Training Campaign.

# III. Progress Review

## 3.1. Formulating a streamlined and comprehensive market-oriented policy and legal/regulatory framework to promote municipal biomass for heat and hot water services

**Promoting changes and amendments to the Ukrainian legislation and regulation in force to facilitate biomass use in the municipal heat and hot water supply.**

UNDP helped partially improve regulatory and policy framework for bioenergy that is finally considered a practical and often the most feasible option (especially when combined with a thermo-modernization of buildings) to replace fossil fuels in providing heating for municipal buildings in Ukraine.

4 out of 6 important pieces of legislation prepared based on UNDP experts recommendations have been adopted in 2017 providing regulatory instruments to stimulate increased use of and investment in bioenergy**.**

In particular, the following laws have been adopted in line with the drafts and suggestion provided by the UNDP-GEF Project experts:

**1)** **The Law of Ukraine #1959-VIII dated 21.03.2017 “On amendment of the Law of Ukraine “On heat supply” on stimulation of heat energy production from alternative energy sources”** (<http://zakon2.rada.gov.ua/laws/show/1959-19>).

This new version of the Law introduces regulatory instruments that have the potential to significantly increase the attractiveness of investing in renewable heat energy production that, in turn, would help replace expensive imported natural gas with domestic renewable energy sources, mainly biomass. Specifically, the Law

* provides for additional authority to the local self-government bodies (municipalities and administrations) to license heat energy production and set tariffs for heat energy produced from alternative energy sources used by population and budgetary institutions (thus withdrawing this authority from the National Energy and Utilities Regulatory Commission and supporting decentralization);
* ensures that tariffs for heat energy produced from alternative energy sources are fixed at the level of 90% of the existing tariffs for heat produced from natural gas for the abovementioned categories of customers;
* provides for alignment of terminology and the framing of definitions in accordance with the EU energy directives.

This creates a competitive environment for producers of heat from alternative energy sources and at the same time reduces the heat tariff for consumers by 10%. The Law was developed in line with Directive No. 2009/28/EC on the promotion of the use of energy from renewable sources and with the National Action Plan for Renewable Energy for the period until 2020.

**2) The Law of Ukraine #1980-VIII dated 23.03.2017 “On amendment of the Law of Ukraine “On introduction of new investment opportunities, guaranteeing the rights and legitimate interests of business entities for large-scale energy modernization**” enabling functioning of the ESCO market in Ukraine *(*[*http://zakon3.rada.gov.ua/laws/show/1980-19/paran2#n2*](http://zakon3.rada.gov.ua/laws/show/1980-19/paran2#n2)*).*

This law makes necessary changes that enable a mechanism for purchase of energy service in line with the Law of Ukraine “On public procurement”, and helps enable functioning of the ESCO market in Ukraine and meet the requirements of the Energy Efficiency Directive No. 2012/27/EC The Law includes UNDP recommendations for improving energy service contracts (EPCs) application mechanisms in heat supply sector.

**3) The Law of Ukraine #2119-19 dated 22.06.2017 “On commercial accounting of thermal energy and water supply”** (<http://zakon2.rada.gov.ua/laws/show/2119-19/print1476017625641734>).

The Law has been developed in line with Energy Efficiency Directive No. 2012/27/EC on Energy Efficiency and provides for mandatory commercial accounting of thermal energy and water for all types of consumers, which is essential to attract private investment in municipal heat supply sector.

**4) The Law of Ukraine # 1581-d dated 09-11-2017 “On housing and utility services” (**http://zakon3.rada.gov.ua/laws/show/2189-19).

The Law contains UNDP experts recommendations on hot water supply services and autonomous heating systems for domestic needs (that has not been agreeable to law before); and regarding commercial accounting of utility services.

UNDP project experts also contributed to **the formulation of bioenergy part of the “Energy Strategy of Ukraine until 2035: Safety, Energy Efficiency, Competitiveness” approved by the Government** Decree #605-p on 18.08.2017

(<http://www.kmu.gov.ua/control/uk/cardnpd?docid=250250456>). The new energy strategy is a program document that defines the whole complex of large-scale reforms in the energy sector of Ukraine and defines the goals by 2035 and global steps to achieve them. The renewable energy sources target is set at 8% in 2020 and 25% in 2035 compared to 4% in 2015.

**Adoption of biomass energy targets in the pilot regions**

In 2017 the Project had to accelerate local efforts to help finally agree and enact Regional Biomass Programs or at least adopt biomass energy targets in 7 selected oblasts of Ukraine. To facilitate Municipal Biomass Programs adoption, the project organized a thematic support task force consisting of 3 consultants that helped manage knowledge and accompanied the process of agreeing and enactment of Regional Biomass Programs with advice and guidance on legal aspects, sustainability and environmental/economic impact. The Project also cooperated with an influential all-Ukrainian NGO “All-Ukrainian Ecological League” that through a number of seminars / round tables / discussions / hearings / meetings and other events supported the adoption of the developed biomass targets making use of the knowledge already gathered under the scope of the Regional Biomass Programmes and number of best practices that key local stakeholders would like to transfer into their own region.

As a result 3 pilot oblasts – Ivano-Frankivsk, Zakarpattia and Dnipropetrovsk – have adopted biomass energy targets. In line with the general decreasing trend in the number of local policy and strategic documents, biomass energy targets were incorporated into existing or ready energy programs to support and expand existing energy objectives. Local councils consider such practice necessary to avoid overlap in objectives and resources distribution and increase the chances of success. There are too many programs, and they are too fragmented to secure necessary financing and bring meaningful results as local authorities cannot sufficiently focus on any particular program or even properly assess their effectiveness. Therefore regional biomass energy targets were included to the following energy policy documents:

On 27.07.2017 necessary changes were adopted (by Zakarpattia oblast council) to the Energy Efficiency and Energy Saving Program of Zakarpattia oblast for 2016-2020.

The Program inter alia envisages reduction of natural gas consumption by population by 3-5% annually and replacement of natural gas with biomass (pellets) for thermal energy generation in the municipal sector by at least 70%.

On 15.09.2017 necessary changes were adopted by (Ivano-Frankvsk oblast council) to the Target Program on Energy Efficiency and Renewable Energy of Ivano-Frankivsk oblast for 2016-2020. The Program provides for considerable reduction (by 35%) of natural gas consumption for thermal energy generation for heating purposes and its replacement by alternative fuels, including biomass, in the municipal and residential sectors; reduction of natural gas import by 15%, reduction of GHG and pollutants emissions by 15-20%. The primary-energy potential for biomass is set at 500,000 tce and includes agricultural and animal farming residues and also forestry residues.

On 01.12.2017 the Energy Saving, Energy Efficiency and Renewable Energy Strategy of Dnipropetrovsk oblast for 2018-203 was adopted by Dnipropetrovsk oblast council.

The Strategy provides for increase in renewable energy share from 17% in 2017 to 40% in 2035; support to biomass production for energy purposes; expansion of alternative thermal energy (commercial) generating capacities from 51 facilities in 2017 to 1200 in 2035; reduction of GHG emissions by 35% in 2035 compared to the baseline 1990 levels.

On the request received from the project’s beneficiary – State Agency on Energy Efficiency and Energy Saving of Ukraine the new oblast have been considered as the pilot for the development of Regional Programme for promotion of biomass utilization for heat and hot water services in Lviv Oblast. The joint working group of project’s and local experts, under the supervision by the Lviv Oblast Council and departments of Lviv state oblast administration have developed the draft of the regional programme.

## 3.2. Developing capacity within relevant national bodies to support development and implementation of municipal biomass programme through the establishment of a Biomass Support Unit or alternative arrangements

**Providing Support for the establishment of the Interagency Biomass Working Group**

Working on the creation of the Interagency Biomass Working Group (The IBWG), the Project has analyzed existing institutional set-up related to biomass energy in Ukraine and suggested establishing of the Interagency Biomass Working Group under the leadership of the Ministry of Ecology and Natural Resources of Ukraine as in this case the bioenergy promotion will be linked to a global aim of Paris Agreement implementation without sector-specific lobbying as it could be in the case with other government agencies. The Ministry of Ecology has high level of working relations with the State Agency on Energy Efficiency and Energy Saving of Ukraine, Ministry of Regional Development, Construction, Housing and Communal Services; and the current Minister of Ecology and Natural Resources of Ukraine has the best performance indicators in the Government of Ukraine and serious political influence. The departments of the Ministry of Ecology have enough capacity to coordinate the work of the Interagency Biomass Working Group.

During April-September 2017 the Project provided organizational assistance, advice and guidance to the Ministry of Ecology and Natural Resources of Ukraine regarding establishing, leading and functioning of the Interagency Biomass Working Group and helped develop its Regulation. Finally, on 12.09.2017 the Interagency Bioenergy Working Group was established according to the Order of the Ministry of Ecology and Natural Resources of Ukraine #355. Relevant national, regional and subregional bodies, non-governmental organizations, including business associations, investment promotion organizations, research institutions etc. have been invited to participate (as observers or otherwise) in the IBWG as required.

In line with the approved Regulation, the IBWG is chaired by the representative of the Ministry of Ecology and Natural Resources appointed by the Minister of Ecology. The IBWG chairperson has two deputies which are representatives of the Ministry of Regional Development, Construction, Housing and Communal Services and the State Agency on Energy Efficiency and Energy Saving of Ukraine. Representative of the UNDP-GEF Project serves as the Secretary of the IBWG. The IBWG will meet at least once every three months.

An Interagency Biomass Working Group was will work across governmental agencies and partners to help bolster policies and regulations promoting biomass for heat and power, including to meet Ukraine’s obligations under the Paris Agreement on Climate Change, make recommendation on biomass management, production and utilization systems, define technology transfer opportunities and delivery models, as well as facilitate the development of effective decision support tools. It should also support a policy dialogue to take forward recommendations of the Project related to commercialization of bioenergy technologies, including regulatory and procedural improvements, incentives, and best practices etc.

First meeting of the established Interagency Bioenergy Working Group chaired by the Deputy Minister of Ecology was held on 4.10.2017. Further, on 04.12.2017 the IBWG met for the second time to discuss the strategy for optimizing the state regulatory control and management of bioenergy development, production and use in Ukraine. UNDP-GEF Project consultants also presented i) a concept of wood residues utilization as biomass for heating, ii) a methodology of economic and financial appraisal of the budget-funded municipal biomass projects, iii) a draft of the Government Decree to include energy crops (trees) cultivation to the list of environmental activities; iv) Biomass info-kit to be used during trainings and information and awareness campaign.

**Development/adaptation of a suitable national methodology for calculating GHG emissions reductions generated due to the replacement of fossil fuel by biomass**

In line with the recommendation (#8) of the Midterm review, the Project is to support the development/adaptation and approval of a suitable national methodology for calculating GHG emissions reductions generated due to the replacement of fossil fuel (in case of the Project – natural gas) by biomass. According to the Midterm Review recommendation the Project may either use CDM methodology or any other methodology developed in accordance with the guidance of Joint Implementation Supervisory Committee (JISC) as a basis, and to adapt it to national circumstances. It needs to be done to ensure the accuracy of estimations, because default methods cannot consider the peculiarities of national statistics etc. and could thus increase the uncertainty.

In Ukraine, GHG emissions occur in the following sectors set by the IPCC: • **Energy;** • Industrial Processes and Product Use (IPPU); • Agriculture; Forestry and Other Land Use (AFOLU); • Waste. **The largest GHG emissions in Ukraine take place in the Energy sector.** In 2014, the share of this sector accounted for around 67% without the LULUCF sector. About 81% of emissions in this sector account for emissions in the Fuel Combustion category, which include the categories of Energy Industries, Manufacturing Industries and Construction, Transport, Other Sectors, and Other.

As a first step to the development/adaptation of a suitable national methodology for calculating GHG emissions reductions generated due to the replacement of fossil fuel by biomass, the analysis of baseline GHG emissions related to the full cycle of solid biomass management in Ukraine has been performed, including the following key categories:

1. GHG emissions (CO2, CH4 and N2O) from solid biomass combustion to be included in Energy sector of the national GHG inventory in line with 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 2: Energy, Chapter 2: Stationary Combustion[[3]](#footnote-3).
2. Non-CO2 emissions from burning of agricultural residues to be included in AFOLU sector of the national GHG inventory in line with 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4: AFOLU; Chapter 5 Cropland;
3. Non-CO2 emissions from agricultural waste (straw) management to be included in Waste sector of the national GHG inventory in line with 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 5: Waste; Chapter: 3 Solid Waste Management.

In particular, the following analyses for each category of GHG emissions related to solid biomass management have been conducted:

* Assessment of the availability and quality of national statistical data on solid biomass volumes and type of use (including combustion for different categories of biomass) as required for adequate reporting of GHG emission estimations under Energy, AFOLU and Waste sectors of the inventory taking into account national circumstances;
* Assessment for completeness and the accuracy of GHG emissions estimations from solid biomass in the national inventory;
* Data gaps identification, i.e. availability of national statistical data to estimate GHG emissions from solid biomass separately for Tier 1, 2 and 3 methods as described in the relevant sections of the IPCC 2006 Guidelines;
* Reference table summarizing GHG emissions from solid biomass for categories a), b), c), including comments on the quality of estimates and data gaps/availability.

As a second step,international approaches and best practices regarding estimating and reporting GHG emissions associated with solid biomass in national inventories were analysed focusing on 5 selected countries with high rates of biomass (in particular agricultural residues) production and utilization, as well as similar climate conditions (Macedonia, Hungary, Serbia, Austria and Croatia).

Further, a step-by-step methodology for estimating and monitoring GHG emission reductions from fossil fuel switch to biomass projects was compiled, including methodology to estimate baseline GHG emissions, methodology to estimate project GHG emissions, emission reductions and monitoring methodology.

## 3.3. Establishment of the Financial Support Mechanism

**Establishment of the Financial Support Mechanism**

The overall aim of the Financial Support Mechanism is the development of a standardized financial product that banks can use to finance a range of projects including the collection and processing of biomass into fuel, the transport and distribution of biomass fuels, the installation and operation of biomass boilers for the provision of heat to municipalities. It is important to note that this FSM will also be applied to financing energy efficiency projects in public buildings, as many of the parameters are the same as for biomass projects. Additionally the FSM is to facilitate the eventual attraction of financial resources to be applied to the financial product further driving its implementation.

Over the past year the positive changes have taken place in Ukraine, creating preconditions for the success of the FSM, in particular:

- Reduced cost of capital. The refinancing rate set by the National bank of Ukraine has dropped more than twice - from 30% in April 2015 to 12.5% in May 2017, and further decline is expected.

- Active implementation of the financial decentralization reform, which has significantly improved the resource potential of municipalities. Compared to 2015, in 2016 revenues of municipalities increased by 49% and are expected to further increase by 16% in 2017.

- Improved regulatory framework now simplifies and accelerates the approval of municipal loans.

- Significant technical support from donors has contributed to the improved municipal management practices.

Ultimately, municipalities are ready to invest in municipal biomass projects for heat and hot water supply.

The design of the FSM as it is currently being implemented is based on the findings from preparatory part of the project that resulted in the aim to develop a commercial financial support mechanism rather than one based on grants or other forms of subsidised lending.

The key result of the FSM is the creation and launching of a financial product (which is pre-finalized as of the end 2017), whereby the partner bank(s) will be in a position to finance the types of projects being supported by this project. This financial product is developed in conjunction with the IFC (according to the Agreement signed in December 2016) and the Partner Bank(s) (initially Oshchadbank) and include legal, financial and technical aspects.

FSM Structure.pdf

The role of the IFC is implementer of the FSM. Additionally, at a later stage the IFC may assist with the provision of additional funds to the FSM via their own resources or those of other financial institutions.

The Financial Product will conform to all of the internal procedures and requirements of the partner banks and will be promoted by them (and the UNDP) in the market. Once finalized and ready for launching the financial product will be presented to relevant staff at the partner bank(s) via a training program. The partner bank(s) will initially fund the projects from their own financial resources, and once the financial product is operational additional funding to support the roll out of the financial product may be sought from other sources.

**The Financial support mechanism also includes the following materials developed by the IFC:**

* **A Municipal Lending Overview: international experience and recommendations;**
* **Financing SMEs in biomass energy sector overview; and**
* **A Handbook on Municipal Lending for Financing EE and Renewable Projects.**

**Current Situation with finalization and launching of the FSM**

During 2017 Oshchadbank has shown great willingness to develop a product together with the support of the UNDP and IFC. It has dedicated personnel and resources to the development of the FSM. A new product named “Energy credit for municipalities” has been developed by Oshchadbank along with draft loan documentation suitable for municipalities to reflect the unsecured nature of the lending as well as linkage to the projects being financed. There is also internal approval to prepare and go for approval for up to 10 pilot projects. Such projects will be based on a credit rating approach. The IFC will provide funding (under the agreement with UNDP) for 10 municipal credit ratings for the first year.

**Lending Parameters and Criteria**

Ukraine’s second largest state-owned bank “Oshchadbank” participating in the FSM doesn’t have limitations in funds available for the municipal loans programme under the FSM and plans to allocate 2 billion UAH for the initial stage of the FSM implementation.

Oshchadbank has developed the following general terms and conditions for financing biomass projects under its financial product:

Borrower: Municipality

Use of Funds: Municipal infrastructure including projects for biomass and energy efficiency.

Amount: from 1 to 50 million UAH (up to USD 2 million)

Portion of Project financed by Bank: up to 80%

Term: up to 5 years

Interest Rate: Refinance Rate + Margin (currently around 17-18%)

Security: unsecured (lending decision based on credit rating)

Other Conditions:

* Energy reductions/cost savings as confirmed by energy audit or other technical documentation
* Independent credit rating

**Challenges and issues**

Certain number of regulatory, procedural and bank issues has been successfully addressed during 2017 under the FSM implementation, in particular:

* Oschadbank has received permission from the National Bank of Ukraine to lend on an unsecured basis. This is essential as municipalities are not able to provide security in the traditional form such as real estate.
* No reserve lending conditions have been confirmed by the National Bank of Ukraine. This is also essential as the amount of reserves that a bank must apply to a particular loan has a great impact on the return of that loan (return on equity) and therefore on the pricing applied.
* Waiver from tender process. Under Ukrainian legislation all state entities must go through a tender process in order to purchase goods or services. However, clarification from the Ministry of Economic Development has been received that such process does not apply to the procurement of financial services such as a loan.

There are, however, some outstanding procedural and project-related issues hampering finalization and launching of the FSM:

1. **Ministry of Finance Approval**. All loans taken by municipalities are subject to MoF approval. Currently this process, largely due that fact that municipalities are in general not taking loans, is not clear and subject to changing requirements from the MoF. Work is advancing on developing a standardized set of documents that will be required from the municipalities by the MoF in order to approve such loans.
2. **Long approval process for project documentation**. In developing the reconstruction/construction projects, the municipality, as any other project developer, is required to go through an extensive procedure for the development, design and approval of the project documentation. Recent legislative changes related to urban development and construction that came into effect on 10 June 2017 mean that these projects will have a longer approval process than in the past, estimated at minimum 11 months. [[4]](#footnote-4) This resulted mainly from the change of consequences classes in building regulations after adoption of Eurocodes (European Standards for the design of buildings and other civil engineering works and construction products) into Ukrainian local national standards reducing the number of consequences classes (CC) from 5 to 3. In practice it means that any construction/reconstruction/modification of heat generating facilities (now classified as CC2) will require obtaining a permission (previously in many cases the developer could simply notify the relevant construction authority by declaration) and more thorough expertize of the design documentation.
3. **Issues with provision of technical assistance for project preparation**. With respects to all types of the building contracts, the party ordering any types of construction or design works (the “Employer”) should exercise the rights of ownership or lease for the land plot (construction site). This legal norm is also true for ordering feasibility study or feasibility analysis, which is an integral part of the project design documentation in accordance with Ukrainian construction law. Thus UNDP-GEF project can not order or directly finance the preparation of feasibility studies as UNDP has only a special status in Ukraine being in no case a local economic entity and having no land ownership rights. The feasibility studies are therefore to be ordered and financed by municipalities (or respective municipal entities) as landowners responsible for ordering the design documentation.

Thusthe main issue now affecting the launch of the FSM is to identify suitable projects that can be financed under the FSM in the nearest future, as any specific project might have a timeline from initial conception through to implementation of 1.5 – 2 years. The part of this is in the “homework” project development and documentation approval phase that must be carried out by the municipality. Therefore project selection is key to having pilot projects implemented under the Financial Support Mechanism in a short time frame. Oschadbank is ready to proceed with pilot projects under Financial Support Mechanism, and currently four municipalities have been identified that are at a later stage in development of suitable projects, these are Kaniv, Slavuytch, Vosnesensk and Cheguiv.

Implementation of the Awareness and Capacity Building Training Campaign in order to present the FSM to municipalities and also identify and engage with more advanced projects is to help speed up the FSM operationalization and accelerate the implementation of biomass projects.

## 3.4. Capacity Building Training Campaign

To advocate agricultural biomass utilization as a promising energy source to be used in municipal/commercial facilities and inform potential FSM’s clients about existing financing opportunities, the project developed and started the Capacity Building Training Campaign that includes Biomass Info-kit and trainings in all regions of Ukraine.

The Capacity Building Training Campaign is primarily targeted at oblast and municipal level authorities, including state government representatives, municipal authorities and specialists, rayon level authorities and specialist as well as non-governmental organizations and community-based organizations.

To provide informational background and create a solid basis for trainings the Project has developed a multi-audience Biomass Info-kit including handbooks, training manuals and presentations for target audience (specialists of agro-industrial complex, environment and nature resources, and housing and utilities sectors).

The Biomass Info-kit includes the following materials:

1. Practical handbook on biomass utilization in the municipal sector of Ukraine for state and municipal departments of housing and utilities infrastructure.
2. Practical handbook on biomass utilization in the municipal sector of Ukraine for authorities and specialists of agricultural sector.
3. Practical handbook on biomass utilization in the municipal sector of Ukraine for environmental authorities and specialists.
4. Handbook on Municipal Lending for Financing EE and Renewable Projects.
5. Training manual (for trainers) to be used in capacity development training on biomass utilization in the municipal sector of Ukraine for authorities and specialists of housing and utilities infrastructure.
6. Training manual (for trainers) to be used in capacity development training on biomass utilization in the municipal sector of Ukraine for authorities and specialists of agricultural sector.
7. Training manual (for trainers) to be used in capacity development training on biomass utilization in the municipal sector of Ukraine for environmental authorities and specialists.
8. Detailed Presentation for authorities and specialists of housing and utilities infrastructure.
9. Detailed Presentation for authorities and specialists of agricultural sector.
10. Detailed Presentation for environmental authorities and specialists.

The Biomass Info-kit will be used during all-Ukrainian biomass capacity building trainings campaign started in December 2017 and planned for at least first half of 2018 covering 24 oblast of Ukraine and targeting minimum 5000 specialists.

**Total estimated number of trainings is 338 events, including:**

* **72 oblast level trainings** (24 oblasts x 3 separate events for the 3 target groups – 1) Representatives of agro-industrial enterprises, oblast and municipal level authorities/specialists of agro-industrial sector; 2) Representatives of oblast and municipal level authorities/specialists in housing and utilities sector, including public and private utilities’ representatives; 3) Representatives of oblast and municipal departments of environment and nature resources, environmental NGOs).
* **266 reyon level trainings** (133 rayons of Dnipropetrovs’k, Poltava, Ivano-Frankivs’k, Zakarpattia, Volyn’, Zhytomyr and Cherkasy oblasts x 2 separate events for the 2 target groups 1) Representatives of agricultural enterprises, rayon level authorities/specialists of agro-industrial sector;; 2) Representatives of rayon level authorities/specialists in housing and utilities sector, including public and private utilities’ representatives).

Apart from the obvious information and educational purposes, the trainings are to a) improve knowledge and capacities for analyzing opportunities and for developing, facilitating or coordinating biomass initiatives; b) catalyze biomass technologies utilization in Ukraine; c) raise awareness about financing opportunities for EE (biomass) projects provided by the Financial Support Mechanism; and d) promote positive changes in attitudes.

**First 50 trainings were conducted during December 2017 for authorities and specialists of agricultural and housing sectors in rayons of Cherkasy oblast (40 trainings) and Zhytomyr obalst (10 trainings). In total 684 persons (327 men and 357 women) participated in the trainings.**

## 3.5. Bioenergy Outreach and Women Empowerment

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In Ukraine women teachers are the main drivers of environmentally responsible behavior  (as women constitute about 80% of 693,3 thousand Ukrainian secondary and high school teachers).

The Project focuses to ensure that, along with other target groups, women teachers are actively involved in shaping sustainable future through participating in practical initiatives providing for quick, affordable and healthy school renovations (for example, biomass burning boilers installation and switching from burning fossil fuels to bioenergy).

The "Energy Efficient School" conference organized by Project on 21-22 September 2017 in Kyiv targeted women teachers and suggested to use schools to drive green technologies providing efficient solutions for smart heating, efficient air conditioning etc., making school buildings the leading examples of innovations, low or zero emissions and high performance indoor environment.

A key message to the audience was that ‘an energy efficient sustainably renovated school apart from the indoor comfort and modernized facilities can offer pupils first-hand experience of visible improvements to the technical services systems; the teachers should encourage renovations and the use of bioenergy, and further teach how to support low emissions by proper energy management and help achieve energy savings by responsible user behaviour’.

# IV. Challenges and outstanding issues

Major challenges and implementation risks relate to ensuring proper outputs under the Outcome 2 (Capacity building to support municipal biomass programmes) and under Outcome 1 (Streamlined and comprehensive market-oriented policy and legal/regulatory framework to promote municipal biomass for heat and hot water services), especially related to ensuring appropriate institutional arrangements to support the regional biomass programmes. The Project is cooperating with various state and oblast level stakeholders – government agencies/ministries, local authorities, the Parliament, NGOs and Associations to intensify partnerships and government relations and mitigate the existing risks.

Another important risk faced by the project is related to operationalization of the FSM. Initial challenges involving selection of and finalizing agreements with financial partner, IFC, have been eventually successfully overcome. The remaining risks are related to a) ability of OschadBank to effectively launch new product “energy credit for municipalities”, but also and most importantly for municipalities to come up with a solid pipeline of bankable biomass projects. To address those risks, the project’s financial partner, IFC, will continue working with and supporting OschadBank and municipalities to help them obtain required credit rating, while in parallel project team will intensify outreach to and capacity building of municipalities to help them understand the FSM, identify and fully prepare biomass projects for funding.

An outstanding issue is that as of 31.12.2017 the project extension request, submitted to UNDP-GEF HQ back in July 2017, has not been either approved or rejected, making it difficult for the project to plan for the next budget period and beyond, if relevant.

1. Page 11 of the MTR Report [↑](#footnote-ref-1)
2. Numbers of recommendations in this table correspond to those in Chapter 5.2 of the MTR Report describing the recommendations in detail [↑](#footnote-ref-2)
3. [↑](#footnote-ref-3)
4. http://zakon2.rada.gov.ua/laws/show/1817-19 [↑](#footnote-ref-4)