



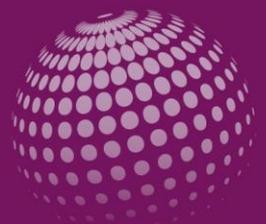
OECD Eurasia
Competitiveness Programme

**SECTOR COMPETITIVENESS STRATEGY
FOR UKRAINE – PHASE III**



**Fostering Investment in the
Biomass Sector in Ukraine**

Project Summary
Working Group on Renewable Energies
December 2015



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The OECD project “Sector Competitiveness Strategy for Ukraine” was launched in 2009. During the initial phase, the project prioritised and defined sector-specific sources of competitiveness and policy barriers for improved investment promotion, particularly in the key sectors of agribusiness, machinery and transport equipment manufacturing, renewables and energy efficiency. The second phase of the project aimed to address specific policy barriers to focus on short-term results through practical and effective measures. The project is currently in Phase III, which aims to put in place the mechanisms for a sustainable reform process and support the Government of Ukraine in implementing them effectively. It does so by sharing OECD expertise and methodologies, identifying remaining policy challenges to private sector competitiveness in the target sectors, consulting closely with the private sector, and organising capacity-building events to strengthen government institutions. The project’s Phase III will conclude in December 2015, and is **co-financed by the European Union and the Government of Sweden.**

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ACRONYMS AND ABBREVIATIONS

bcm	Billion cubic meters
CHP	Cogeneration Heat and Power
EIA	Environmental Impact Assessment
Gcal	Gigacalories
GDP	Gross domestic product
HA	Hectares
Mtoe	Million tonnes of oil equivalent
Mtce	Million tonnes of carbon equivalent
MWh	Megawatt/hour
NEUSRC	National Energy and Utilities Services Regulatory Commission of Ukraine
OECD	Organisation of Economic Co-operation and Development
PPP	Purchase Power Parity
RES	Renewable Energy Sources
ROI	Return on Investment
SOE	State Owned Enterprises
TOE	Tonnes of oil equivalent
TPES	Total Primary Energy Supply
USD	United States dollars (currency)
VET	Vocational Education and Training

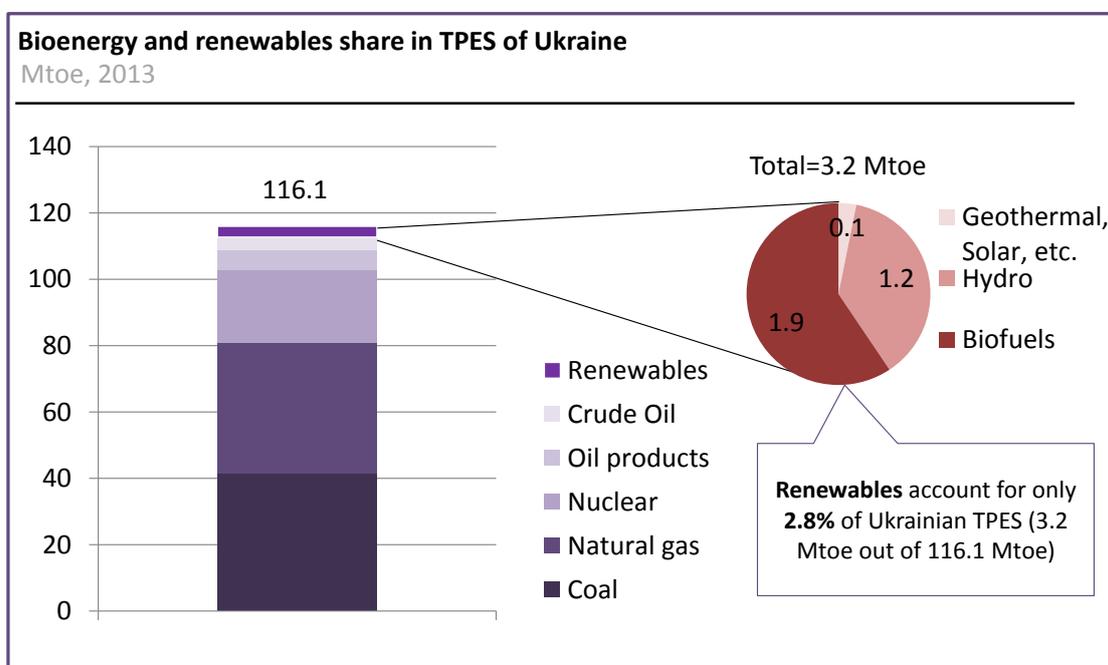
FOSTERING INVESTMENT IN THE BIOMASS SECTOR OF UKRAINE

Context: Ukraine’s high potential for developing the renewable energy sector through biomass is largely untapped

1. Raising the renewable energy share is an important opportunity for Ukraine. The potential is significant and the economic benefits connected to the sector’s development are substantial. An increased share of renewables would diversify the energy supply towards cleaner sources, and diversify the energy portfolio as the country would be less dependent on coal for electricity, and gas for heating (particularly considering the recent disruptions in supply). In addition, the growth of renewable energies would push private sector development, creating jobs and new expertise along the value chain, thus increasing the country’s competitiveness.

2. Bioenergy in Ukraine comprises the largest share of Total Primary Energy Supply (TPES) from Renewable Energy Sources (RES) with about 1.9 Mtoe (59.3%). However, bioenergy accounted for only 1.6% of TPES in Ukraine, as the renewable energy sector overall accounted for 2.8% of Ukrainian TPES in 2013 (Figure 1, IEA, 2015)¹. For example, if a rather limited part (20-30%) of the 120 million tonnes of biomass feedstock (including crop production, waste, animal, wood and food processing residues) produced yearly in Ukraine could be sold to biomass electricity and heat generators, not only would agricultural businesses gain from the trade², but they would be able to guarantee supply for numerous operators in the biomass sector. Moreover, estimates suggest that cultivating 1.5% to 3% of the unproductive land (approximately 118 thousands hectares) could result in an energy output of 0.57 Mtoe by 2020 (UABIO, 2015).

Figure 1. Renewables represent a very small share of Ukrainian TPES, but bioenergy has a strong potential



Source: IEA (2015)

3. In general, although the potential of solar energy and wind power is high in specific regions, biomass is the renewable energy source with the greatest potential across all regions in Ukraine. In the estimates of

IRENA, Ukraine has the potential to increase renewable energy use by ten-fold from 87 petajoules (PJ) in 2009 to 870 PJ of total final renewable energy in 2030. Nearly 80% of total final renewable energy potential in Ukraine is accounted for by biomass technologies, including heating buildings and industrial plants (comprising district heating), power generation, and transport fuels (IRENA, 2015).

4. Evidence from OECD consultations and field visit to Sumy suggest that when making a biomass investment decision, there are three main conditions that are crucial for the investors: predictability of timing for construction, ensured operability and clarity on the availability of resources both, human and financial, for long-term projects. Renewable energy investments can be attractive, as they offer stable and predictable long-term cash flows through revenues underpinned by regulated tariffs. Furthermore, recent legal changes in Ukraine that remove local content requirements³ are positive. In general, the process' transparency is the key to allow an investor to make an informed decision, making the country attractive for foreign and domestic investments.

Overall recommendation: Develop a comprehensive approach to attract private investment in Ukraine's biomass sector

5. The Government of Ukraine should introduce a comprehensive approach to foster private investment in Ukraine's biomass sector. The actions should focus on creating an attractive investment environment that addresses the main concerns of potential investors: predictability of timing for construction, ensured operability and a supporting environment for profitability and sustainability of the investment over time. These actions should target the investment process and required procedures, as well as the general investment environment.

Challenges: The key conditions needed by investors to enter the market are not satisfied

6. Ukraine does not host an environment to support investments and the development of new biomass projects. The country lacks conditions, such as transparency and trust throughout the various stages of investment, which help create and support an environment to welcome and motivate investment. It is worth noting that the current economic situation in the country, with an unstable currency and limited access to financing from local banks, also constrains investment, although policies to improve such underlying conditions are beyond the scope of this note.

7. The OECD carried out a series of consultations and seminars with business representatives, government officials, and academics to discuss the process of investing in biomass in Ukraine, and to better understand both, the framework and the market. As part of the work, the OECD visited Sumy Oblast to fact-check the context of investments in the renewable energy sector in Ukraine (see Box 1). The situation has evolved quickly since the beginning of the project and the study visit to Sumy in 2013. However, most of the challenges identified are still relevant and remain to be addressed.

Box 1. Rationale for a Case Study of Sumy Oblast

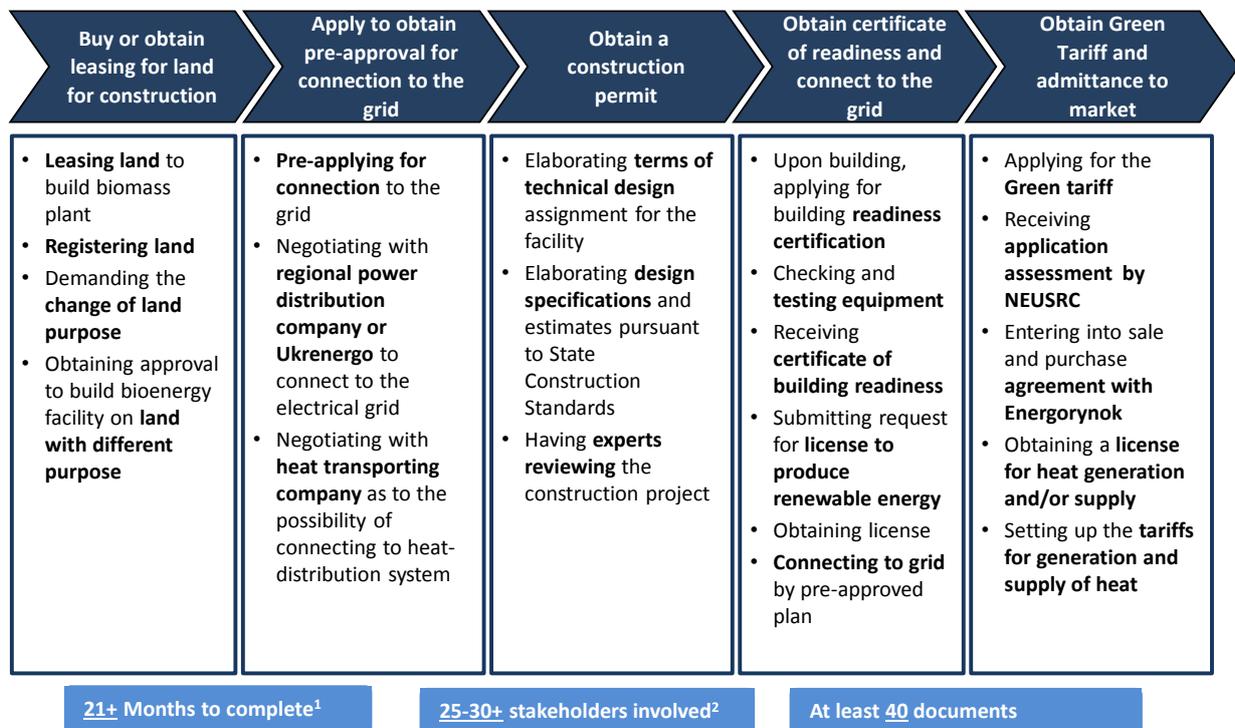
Sumy Oblast is located in agriculture-intensive Eastern Ukraine, where significant amounts of agricultural residues are produced, and additional biomass potential is generated by forestry. The potential maximum for biomass energy production in Sumy Oblast is estimated at 17,400,000 MWh, though the potential production based on current technological constraints is 6,100,000 MWh. The latter is the equivalent of 35.7% of Sumy Oblast's energy consumption (3rd International Forum of Renewable Energy and Energy Efficiency, 2011). However, despite the significant biomass potential in Sumy Oblast and its benefits for the region, electricity production relies almost entirely on fossil fuels.

The study visit to Sumy Oblast in September 2013 showed that complexity and lack of clarity characterise administrative procedures for establishing a biomass plant. There is a multitude of steps and organisations involved

throughout the process, from obtaining allocated construction land to gaining physical access to the power grid, as well as the electricity wholesale market and the green tariff. Furthermore, investment promotion activities involve several actors and have yet to adopt a standard approach for attracting investors from different sectors.

8. The analysis of the investment process to set up a biomass plant in Ukraine shows five main steps, which are articulated in 17 phases (see Figure 3, Petrov Y. and Sysoiev M., 2015), and are regulated by many acts and codes, involving a high number of different stakeholders. In addition, the 2014 OECD Investor Survey on “Achieving a Level Playing Field for International Investment in Clean Energy”⁴, carried out among international investors from countries all over the world showed that local content requirements often represent the main restriction to international investors of renewable energies, followed by administrative and technical barriers, defined as “burdensome permitting, licensing or certification procedures, or restricted access to the grid”(OECD, 2015). There is a need to streamline the process and clarify requirements to make the market more attractive for investors.

Figure 2. There are five main phases to set up a biomass plant in Ukraine



¹ Please note that some of the stages are not consecutive so the total time may differ; ² in practice the process may involve up to 50 or even more responsible persons/authorities, depending on peculiarities of each case and local approaches

Source: Petrov Y. and Sysoiev M. (2015)

9. OECD analysis and recent consultations confirm that private players willing to invest in Ukrainian biomass electricity and heating generation face a complex and unclear system. Burdensome investment procedures and an insecure investment environment hinder the pre-conditions that are needed by investors to enter the market. In particular, investors are affected by the following barriers: unpredictability of investment timeframe, operability not ensured, and uncertain profitability and sustainability of investments.

Unpredictability of construction timeframe

10. Specific timeframes to obtain access to land plots for projects and to obtain all permits to start building are often not actually enforced. Automatic mechanisms to ensure the respect of the legal deadlines are only partially present, while the evaluation process for granting permits and documentations is rather opaque. In addition, the actors involved and procedures in different regions (oblasts) can be very different, depending on the location of potential investment, which adds to the lack of clarity. For example, some oblasts operate independent investment agencies, while others operate through branches of the former national investment agency, which no longer exists, leaving these services ineffective with no clear mandate and instructions on how to operate.

11. Procedural issues related to land and construction permits add further uncertainty to the investment climate. The current moratorium on land impedes the development of a free market with well-functioning property rights, thereby hindering investment. On the one hand, the current procedures for purchasing and designating purpose of **land** for biomass development are very complicated. Involved stakeholders in the procedure differ according to each region and there are no automatic or tacit approvals built into the system, which results in uncertain timeframes. Moreover, in some cases the registration of land must be carried out at national and regional level in a series of bureaucratic steps and with several interphases, which slow the process.

12. In addition, existing land rights are not always well defined due to the lack of a unified land cadastre. The process to allocate land is further complicated due to the lack of zoning or detailed planning for territories. According to legislation⁵, state or municipal authorities should develop plans and adopt them at their own cost. However, in practice, the lack of funds and institutional competences to implement the plans pushes the authorities to ask investors to grant the funds to outsource the task and design the necessary documentation. This situation increases the possibility of corruption and delays the implementation of investment projects.

13. On the other hand, procedures to carry out **construction** can require, along the 7 stages strictly related to construction, 14 different permits, approvals and notifications where several different stakeholders are involved (see ANNEX A), which can lead to lengthy delays. Recent changes in legislation regarding construction have simplified this process to some extent, by removing the requirements to notify state fire agency, local authorities, etc. Furthermore, it is now allowed to correct mistakes which are discovered by the owner of the project.⁶

Facilities' operation not ensured

14. Even if an investor is able to overcome the difficulties to construct a biomass facility, the investor still cannot safely assume that it is possible to operate and receive payment for supply of electricity or heating. The biomass value chain is not well structured in Ukraine, and largely restricts the investment process. In particular, one of the main barriers is the complication for the producers in getting access to the consistent fuel supply in the country. This is affected by several factors, including missing information regarding possible suppliers/clients in the surroundings. Specifically for SMEs, the lack of contracting guidelines is an important barrier to the provision of fuel, as they often lack the necessary legal capabilities to formulate complex contracts on their own.

Uncertain profitability and sustainability of investments

15. An investor should be able to make a reliable financial assessment for a potential investment, particularly in terms of profitability. Conditions in Ukraine do not provide possibilities to make sound investment decisions. In particular, incentives based on guaranteed Green Tariff⁷ for energy and

Stimulating Tariffs⁸ for heat are not secure as the tariffs are granted only after the facility is built and commissioned (ex-post). This means that the Green and Stimulating Tariffs are approved and granted only after full up-front costs of land acquisition and facility construction have been incurred. Having uncertainty to receive guaranteed payment undermines the structure of incentives, which directly influences future cash flows, and thus, hinders investors to consider developing a biomass plant in Ukraine.

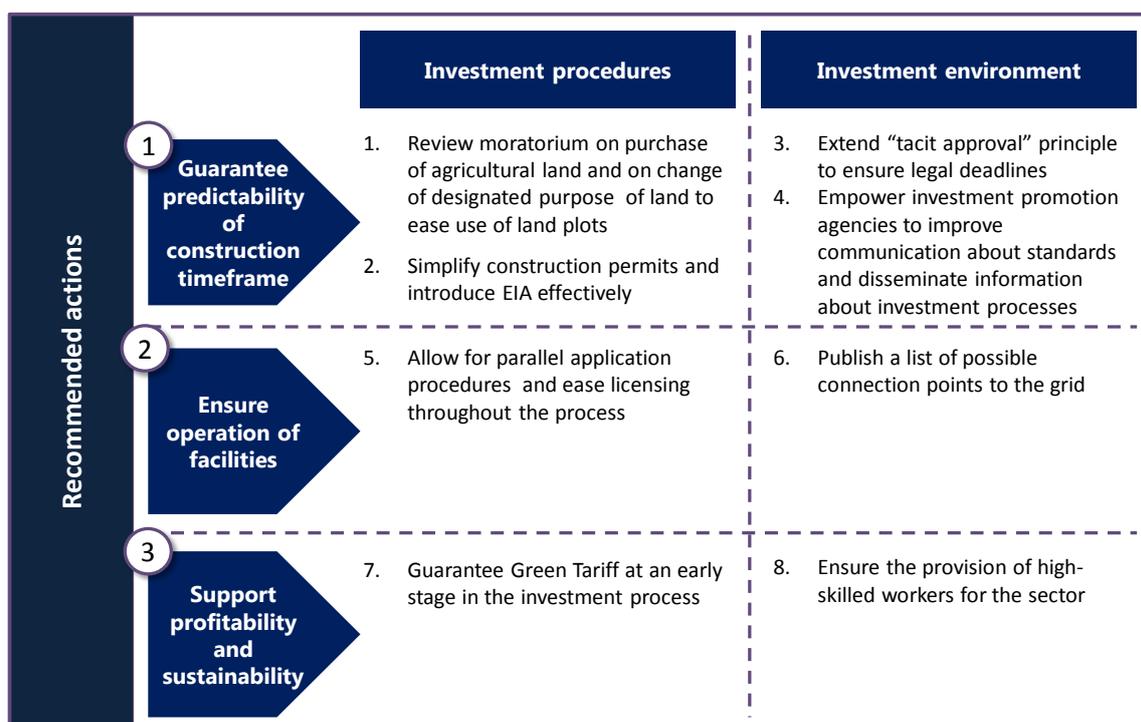
16. Lastly, to develop and attract investments, the renewable energy sector should offer the skills needed in the regions. Evidence from the OECD-World Bank Survey on Skills Gaps in Ukraine, confirms that high-skill occupations are in demand in the renewable energy sector, with the highest skills gap reported for different types of technicians (in fields as technology guide bioenergy installations, electrical engineering and mechanical engineering). Attracting a sufficient number of adequately skilled technicians can be vital for the development of operations for renewable energy firms. A second-priority need relates to different types of professionals and managers. Even though this is a marginal need, as the number of employed professionals and managers is overall quite low and the sector is small at present, access to these types of skills might be critical for the growth of the sector in a medium-term perspective. Evidence from the survey shows that skills gaps negatively affect the competitiveness of renewable energy companies, namely by impacting their efficiency and quality, resulting in loss of sales opportunities.

RECOMMENDATIONS TO FOSTER INVESTMENT IN THE BIOMASS SECTOR OF UKRAINE

17. The Government of Ukraine should take a comprehensive approach for tackling the challenges to attract private investment in Ukraine’s biomass sector which will result in generating economic activity in the regions while contributing to the transition to energy independency. The overall suggested strategy, encompassing actions regarding both, procedures and investment environment, falls into three main areas that represent key conditions for investors:

1. Guarantee predictability of construction timeframe
2. Ensure operation of facilities
3. Support profitability and sustainability of investments

Figure 3. A comprehensive approach should address the three main issues for private investors



Guarantee predictability of construction timeframe

18. To reassure investors on the implementation of their projects, the following four actions can be put in place: review the moratorium on purchase of land, and the procedures for the lease of lands and requirements to designate purpose of land for biomass development; simplify construction permits and introduce EIA effectively; increase transparency by extending “tacit approvals” principle; empower regional investment promotion centres to improve communication of standards and disseminate information online about investment processes.

Action 1 – Review the moratorium on purchase of land, and the procedures for the lease of lands and requirements to designate purpose of land for biomass development

19. A reform in the moratorium and the creation of a unified land cadastre to better delineate land rights and smooth land transactions would make land more accessible and available for building plants.⁹ Second, streamlining the procedures for registering usable land for the purposes of biomass development can be done by improving the legislative base. For example, allowing biomass development on non-agricultural land or land plots unsuitable for agricultural use would streamline procedures for changing land registration.¹⁰ Third, removing duplication of registration of land procedures at both national and regional levels would enable a more timely investment process by streamlining bureaucratic steps. This could be achieved by setting up a unified land cadastre as suggested before.

Action 2 – Simplify construction permits and introduce EIA effectively

20. A simplified process for obtaining the construction permits for biomass plant should be introduced. Investors should have clear information on how to obtain the needed permits and the appropriate interphase. A reduced number of stakeholders will lower the possibility of delays. It is worth noting, however, that the procedure has recently been improved⁶. In European countries, the process to obtain a construction permit is strongly linked to obtaining an environmental permit (Directive 2011/92/EU, known as 'Environmental Impact Assessment' – EIA Directive)¹¹, which ensures their effective use. The recent push towards European standards opens the opportunity of streamlining the permitting process for construction by the effective introduction of the Environmental Impact Assessment (EIA), currently not present in Ukraine.

21. For example:

- In Italy, acquiring permits for one project can be carried out simultaneously, so that an integrated environmental permit (including for construction, water discharge, and operation permits) can be obtained, which simplifies the process for receiving approvals.
- In the Netherlands, permits are obtained through a clear sequential approach: firstly, the environmental permit, then the phase of public appeal¹¹, then the granting of the permit to the investor.
- In the UK, the environmental impact screening allows for obtaining the planning permit, (which integrates the construction permit and the land use approval) and the environmental permit in parallel.

Action 3 – Increase transparency by extending “tacit approvals” principle

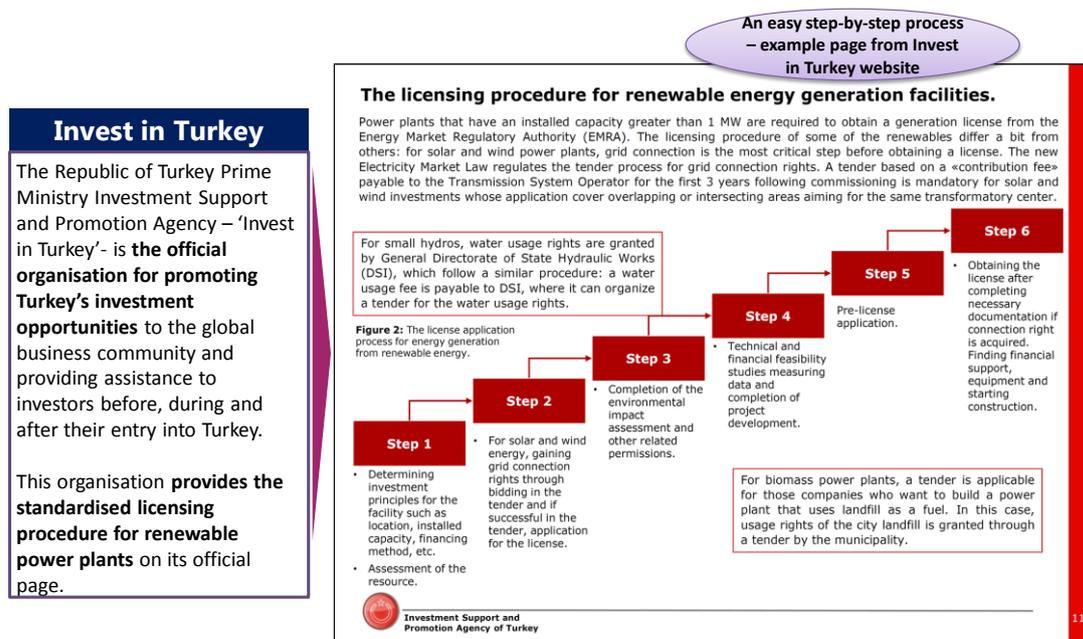
22. Once an investor submits a proposal providing the relevant documentation, certain response timing should be guaranteed. This could be achieved by introducing automatic “tacit approval” by the authorities once deadlines are reached (without the possibility of an appeal) to incentivise public administration to act in time, to ensure the private investor against unforeseeable delays caused by inefficiency in public agencies, and to reduce corruption. This legal principle is already applied to most of the construction phases and to part of the land allocation process (Petrov Y. and Sysoiev M., 2015), but it should be extended to all other phases in order to guarantee the predictability of the time and resources involved in all the phases. In addition, all the various requirements (in terms of equipment, construction, and environmental permit, etc.) and complications should be made clear and accessible beforehand, to allow proper planning.

Action 4 – Empower investment promotion agencies to improve communication about standards and disseminate information online about investment processes

23. The investment promotion centres should operate as a “single-window” again, but with a clearer mandate, qualified staff, and in, line with a national investment promotion strategy. The regional centres should develop a tailored investment strategy. In the regions considered to have high potential for biomass production, like Sumy, a focus on the sector should be breed into the investment promotion strategy to ensure the sector is well understood and positioned. For biomass-based energy production, in particular, and renewable energy investments, in general, the centres could act as brokers for investors, functioning as gateways to a wide array of services ranging from planning and contacts brokering, to implementation and communication with local authorities in terms of procedures, land allocation, etc. To further ensure clarity of the process, the duration, the costs of licencing/permits and the stakeholders involved, the investment promotion centres could prepare a ready-made investment package for biomass production in some of the priority regions. Some successful international experiences may be considered to define the most appropriate model:

- “Invest in Bavaria,” the business promotion agency of the Bavarian Ministry of Economic Affairs and Bayern International GmbH, has been in operation since 1999 supporting 1,350 investment projects in Bavaria, among many are related to Biomass. The services provided by the agency are free of charge, and are organised in four main areas: planning and preparation, location search and location selection, implementation, and, support to national and international growth.
- “Invest in Turkey” is the Republic of Turkey Prime Ministry Investment Support and Promotion Agency, which provides assistance to investors before, during, and after their entry into the Turkish market. In particular, this body provides the standardised licensing procedure for setting up a renewable power plant, summarised in an easy step-by-step process (6 steps in total) and is promptly accessible online, as shown in Figure 5.

Figure 4. Invest in Turkey offers detailed information for potential investors in renewable energy



Source: Invest in Turkey, Official Home Page, <http://www.invest.gov.tr/en-US/Pages/Home.aspx>, accessed 2 December 2015.

Ensure operation of facilities

24. The government should act both on the procedure and on the investment environment to allow for parallel procedures and support the procurement process for biomass fuel, especially for SMEs.

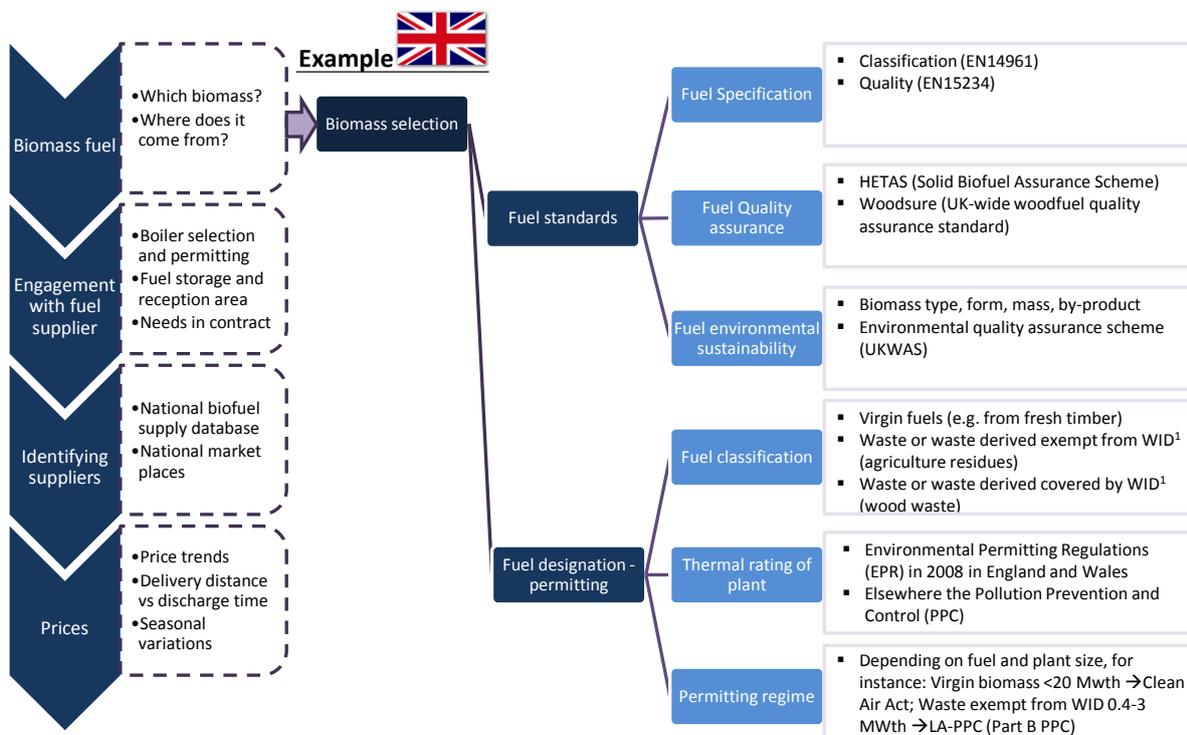
Action 5 – Allow for parallel procedures

25. Parallel application procedures should be introduced to lessen the upfront risk that investors face today. It should be allowed to the investor as a principle to proceed in parallel with the different requests to public bodies whenever possible, for instance making in parallel the request for the connection to the grid and the application for the Green or Stimulating tariff (see also Action 7). For example, Japan’s recent shift towards renewable energy sources (especially after the Fukushima nuclear disaster in 2011) led to a strong increase the installed capacity of biomass plants. The typical procedures for setting up a biomass plant in Japan include a preliminary consultation for connection to the grid at a very early stage, between the stages for spatial planning and the feasibility studies. Requests for grid connection, application for grid contract and application for facility certification are all made in parallel before the financing stage.

Action 6 – Support procurement process for biomass fuel, especially for SMEs

26. Fuel procurement should be supported through targeted programmes. In particular, information on which quality of biomass fuel to choose, which kind of engagement, which supplier to select, and average prices in each region should be collected, organised and then made readily available. For instance, in the UK, the Carbon Trust publishes biomass fuel procurement guides and example contracts to assist fuel procurement and purchase negotiations (see Figure 5).

Figure 5. Fuel procurement guide for biomass operators can be particularly useful for SMEs



Source: Carbon Trust (2012), *Biomass fuel procurement guide*

Support profitability and sustainability of investments

27. To foster investment in biomass, as in other sectors, the Government needs to support the possible profitability and sustainability as signals to the investors. The Government should work towards putting in place the conditions to effectively attract and retain the investments, namely by promoting the financial soundness of biomass projects in Ukraine and by guaranteeing the availability of human capital to meet the needs of investors.

Box 2. The Danish experience in biomass supply chain

The study visit to Denmark in April 2015 as part of the OECD project, organised in collaboration with the Danish Energy Agency, gave the possibility to the Ukrainian delegates to have a direct experience of the production methods, technical capabilities and supply structure of a biomass district heating facility (Borup Varmevaerk). In Denmark, one of the countries with the most developed biomass market in the world, there are 200 district heating plants and 15 Combined Heat and Power (CHP) plants using wood or straw, 33 CHP plants operating with biogas and 8 district heating and 24 CHP plants using municipalities' solid waste. Altogether, biomass production accounts for 13% of the electricity consumption and 21% of total space heat. Moreover, many large-scale CHPs around major cities will convert to biomass in the next ten years, as many large cities adopt low carbon or zero carbon climate strategies.

The environmental strategy in the country has played a crucial role, planning to raise the share of final energy consumption from renewables from the 30% required by the EU Renewable Energy Directive, to the 35% set in the Danish Energy Agreement by 2020, and to 100% in 2050. In particular, burning straw on fields has been banned since 1990, in 1993 it has been made mandatory for a share of the straw to be used for electricity production (1.2 million wet tons straw and 0.2 million wet tons wood chips by 2000). These policy actions played an important role in the development of the biomass market by ensuring the fuel supply. Moreover, feed-in-tariffs for biomass-based electricity, introduced in the early 80s, has been increased in 2008, strengthening the incentives to invest in biomass energy and heat production.

Action 7 – Allow for Green Tariff and Stimulating Tariffs application procedures before commissioning

28. Ensuring that the Green Tariff and Stimulating Tariffs will be granted early in the investment process before commissioning, unlike in the current system, would allow investors to build more reliable financial plans and ROI calculations. The Green Tariff and Stimulating Tariffs are the main guarantee of ROI in terms of cash flow and should therefore be guaranteed in a transparent and timely manner. For example, in Germany, the Renewable Energy Sources Act of 2014 (which regulates access to feed-in tariffs¹² at the national level) obliges grid operators to grant them remuneration for investment in the form of a feed-in tariff, which is calculated on the cost structure of the installation. In this way, the public administration is able to guarantee a reasonable margin to the investor while avoiding overspending.

Action 8 – Ensure the provision of high-skilled workers for the sector

29. The higher education system should be updated in order to guarantee the provision of high-skilled workers such as bioenergy installations, electrical engineering and mechanical engineering technicians. The VET system could also play an important role in training for the sector. Attracting a sufficient number of adequately skilled technicians can be vital for short-term development of operations for renewable energy firms. Universities should work more closely with business representatives to identify the current and future needs of the industry and put in place practical training and updated curricula that could satisfy the growing demand. Regular exchanges between the industry and the education system would be beneficial for upskilling the labour force and supplying the skills needed by the industry to develop, which would result in an additional asset for the attractiveness of the sector for potential investors.

Notes:

¹ The National Renewable Energy Action Plan (as by Renewable Energy Directive 2009/28/EC), adopted by the Cabinet of Ministers of Ukraine on 1 October 2014, aims at boosting renewable energy consumption to 8.6 Mtoe by 2020. This action plan is currently under review for updated targets.

² Up to 5-600 UAH/ton, as from the discussion with sector association UABIO during bilateral meeting with the OECD/ECP (July 2015).

³ On 4 June 2015, Verkhovna Rada of Ukraine adopted the Law "On Amending Some Laws of Ukraine As to Providing Competitive Conditions for Producing Electricity from Alternative Energy Sources" No. 514-VIII (hereinafter – Law No.514), which removed the local content requirements as a pre-condition for obtaining the Green Tariff, while keeping them as a stimulus: matching them would allow to surcharge the Green Tariff by 5% (localization of 30%) or 10% (localization of 50%). Moreover, the Law No.514 changes the definition of biomass covering also products (not only waste).

⁴ Based on a sample of 62 respondents from 59 leading companies active internationally (68%) or in their home country (27%) involved in solar PV and wind-energy value chains.

⁵ Land Code of Ukraine No. 2768-II dated October 25, 2001; 4) Law of Ukraine "On Regulation of Urban Planning Activities" No. 3038 dated February 17, 2011.

⁶ Simplifications were introduced by Resolution of the Cabinet of Ministers of Ukraine "On Certain Aspects of Performing Preparatory and Construction Works" No. 466 dated April 13, 2011 and applied through Resolution of CMU No. 747 of August 26, 2015 and No. 879 October 21, 2015.

⁷ Feed-in tariff (FIT), or Green Tariff, is the most widely used policy mechanism designed to accelerate investment in renewable energy technologies. Usually it achieves its objective through long-term contracts (15-25 years) with renewable energy producers based on the cost of generation of each technology. In the case of biomass, usually the policy-makers distinguish between different fuel supplies, such as forestry wastes, agricultural wastes, farm wastes, etc. to account for the cost differences. Rates of Ukrainian Green Tariff are published by the National Energy and Utilities Services Regulatory Commission of Ukraine (NEUSRC) and the legislation has recently been updated (Law No.514).

⁸ Stimulating tariffs for heat production from biomass or another source substituting natural gas, at the rate equalling or close to the tariffs for heat produced from natural gas.

⁹ While the moratorium should be lifted as soon as possible, the legal and institutional conditions for an effective land market should be in place first. Lifting it as early as currently planned, in early 2016, would not provide sufficient time to appropriately mitigate related risks in a context of weak institutions and under-developed legislation. For example, the OECD recommends that the State Agency on Land Resources should be downsized and transformed into a modern cadastral service without regulatory or enforcement powers (Review of Agricultural Investment Policy of Ukraine, OECD, 2015).

¹⁰ In particular, the Draft Law No.2529a introduces changes to the following 3 legislative acts:

- 1) The law of Ukraine "On power sector lands and legal regime of special zones for energy objects" – the amendments mainly propose that the objects producing heat and/or electric energy using renewable energies and/or biomass (further – the Objects) can be placed on land plots of all categories and of any form of ownership without changing the designated purpose of the relevant land plot.
- 2) The Land Code of Ukraine – the amendments mainly relate to that the Objects are allowed to be constructed on non-agricultural land plots or on agricultural plots of worse quality.
- 3) The Law of Ukraine "On regulation of city construction" – the amendments propose that until 1 January 2018 the Objects can be constructed on the land plots/territories even if there is no duly approved detailed plans of such territories or zoning plans.

¹¹ The Environmental Impact Assessment (EIA, 2011/92/EU) directive outlines which biomass projects are subject to an EIA, which procedure should be followed and the content of the assessment, so the approach is streamlined throughout Europe.

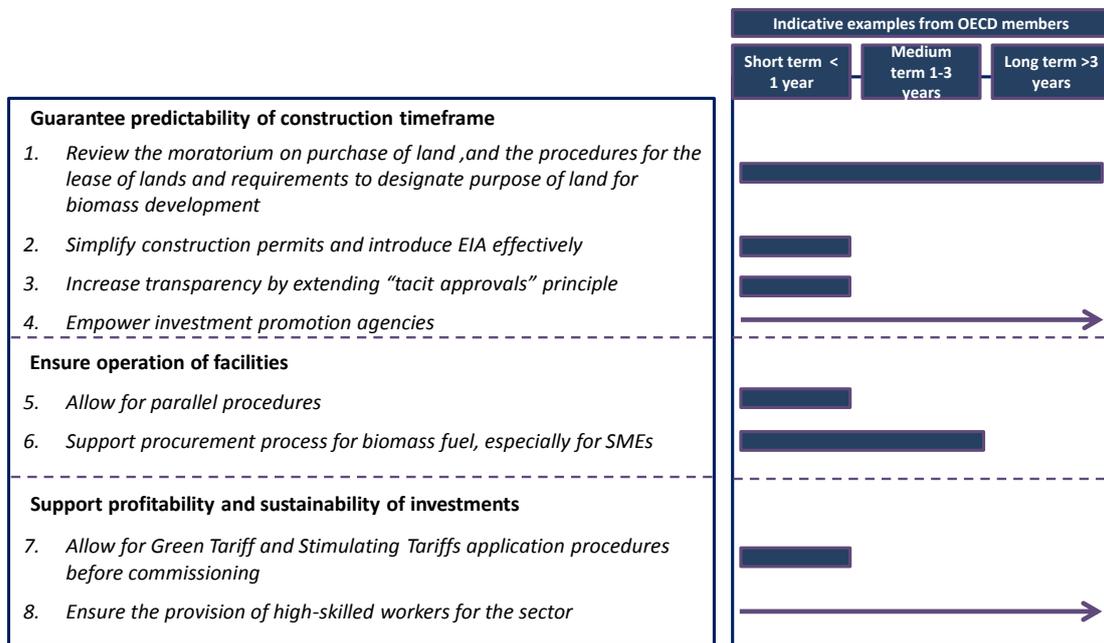
¹² Policy mechanism similar to the Green Tariff discussed above.

IMPLEMENTATION GUIDELINES

30. This section outlines some guiding principles for implementing the policy recommendations discussed in the previous chapter. Figure 6 presents a roadmap for implementation – each recommendation has a different expected implementation phase.

- **Develop policies and programmes in consultation with relevant stakeholders.** The government should keep enterprises on electricity and energy, regional public agencies, electricity and heat generators, biomass feedstock suppliers, and investors informed about the intended policy reform. Incorporating their feedback and suggestions can be crucial both for the design and implementation phases of the reform. For this purpose, the government may consider continuing to use the public-private working group established by the OECD as part of the project (see Annex B), and organising regular meetings to consult with working group members.
- **Ensure that policies and programmes are incentive-based.** Improving the investment process and investment environment will be a key success factor for the biomass sector in Ukraine. Therefore, the incentives for and advantages of financing and implementing biomass projects should be clear, understandable and well-known across the whole country. For instance, Green Tariff and Stimulating Tariffs approvals offered in a transparent and timely manner can ensure the desired profitability of biomass projects and attract investors.
- **Use other countries' experiences to inform policy design and implementation,** as well as to build capacity in the country. International experience and good practice are essential to identify the most suitable features for a Ukraine-tailored approach as there is no one-size-fits-all. This report has provided examples of policies that have been introduced to foster the biomass sector by a range of OECD countries. There are many other examples that can be studied. However, not all policies are entirely applicable to the situation in Ukraine, where effective enforcement of policies and legislation is crucial to build mutual understanding among the players involved in all the supply chains of biomass feedstock as well as construction and operation of biomass plant. It is therefore important to take into account the social, economic and political context in which the reforms were introduced before adapting and tailoring them to the local context.
- **Ensure adequate monitoring and evaluation.** Policies and programmes should be regularly monitored and evaluated to ensure efficient and effective implementation. In particular, policy makers need to ensure that budgetary resources are spent with care and that targets are met. In this regard, a scheme to assess the level of implementation of the various policies should be updated constantly, identifying milestones, responsibilities, budget needs, deadlines, next steps, and expected results for each practical sub-action.

Figure 6. Suggested implementation timeline



ANNEX A: KEY LEGAL STAGES OF BIOENERGY PROJECTS

The following table summarises the key legal stages of bioenergy projects, highlighting the expected timing and the total number of stakeholders that must be involved (for a precise account of the legislative basis, please refer to Petrov Y. and Sysoiev M., 2015):

Table 1. Key legal stages of bioenergy projects

Key Stages	Expected legal timing ¹	Key stakeholders involved
1. Elaboration of investment plan	Depending on the investor	0 (done by the company itself)
2. Obtaining rights in land plots	If private property: 5+ months ² If public property: 9 months + negotiation	If private property: 2+ stakeholders (Governmental authority or local self-government authority; A body for state registration of title rights established by the Ministry of Justice of Ukraine or a Notary) If public property: 6+ stakeholders (Governmental authority or local self-government authority; a body for state registration of title rights established by the Ministry of Justice of Ukraine or a Notary; Land management organization; urban planning and architecture authority; other authorities that handle matters related to land plots with certain types of intended purposes; Center for Administrative Services / Certified land appraiser; State land authority and its local departments)
3. Agreeing the possibility of connection to electricity/heating grids with grid operators	2.5 months	1 stakeholder [Power distribution company (<i>oblenergo</i>) or a licensee to transmit power by transmission and interstate lines (State Enterprise "National Energy Company "Ukrenergo") <u>or</u> Heat distribution company] 2 stakeholders (if co-generation, since both bodies should be involved)
4. Elaboration of technical assignment for design documentation	0.5 months (assuming that the investor presents documents in parallel to the different authorities)	8+ stakeholders (Urban planning and architecture authority; authorities (organizations) responsible for engineering support of the construction project (water, heat, electric power and gas supply, sewage, outdoor lighting, telephone networks, fire protection and technogenic safety; Company and designing organization)
5. Elaboration of design documentation and	Not determined by law	2 stakeholders (Expert organizations meeting the criteria established by the Ministry of Regional

¹ Assuming that the time limits are met at their upper bound (so for example, "up to 1 month" is counted as "1 month"). Please note that some of the stages are not consecutive so the total time may differ.

² Unless forced repurchase of the land is required, since this would envisage initiation of court proceedings.

related documents		Development, Construction and Housing and Utilities Infrastructure; Designers)
6. Expertise of the construction project (where necessary)	1 month	2 stakeholders (Expert organizations meeting the criteria established by the Ministry of Regional Development, Construction and Housing and Utilities Infrastructure; Designers)
7. Securing construction and preparatory works	0.25 months	1 stakeholder (State Inspectorate for Architecture and Construction Control or its local office)
8. Construction	1 month	1 stakeholder (State Inspectorate for Architecture and Construction Control or its local office)
9. Examination and test of the equipment	2 months + time for safety tests (not specified)	2 stakeholders (Electric power distribution organization; State Service of Ukraine on Labour Issues)
10. Commissioning	0.5 months	2 stakeholders (State Inspectorate for Architecture and Construction Control or its local office; Owners/licensees of the respective engineering systems)
11. Connection to the electricity/heating grid(s)	0.5 months + negotiations	3-4 stakeholders (Power distribution company –grids owner-; Power supply company; State Enterprise "National Energy Company – Ukrenergo"; State Technical Commission; Heat distribution company)
12. Obtaining a license for power generation	1 month	1 stakeholder (National Commission for State Regulation of Energy and Public Utility Services)
13. Formalization of membership in the Wholesale Electricity Market	2 months	1 stakeholder (The Wholesale Market Board)
14. Establishing "green" tariff	1 month	1 stakeholder (National Commission for State Regulation in Energy and Utilities Sectors)
15. Entering into power purchase agreement with State Enterprise "Energorynok"	1.5 months	2 stakeholders (State Enterprise "Energorynok"; the National Commission for State Regulation in Energy and Utilities Sectors)
16. Obtaining heat production and/or supply license under regulated tariff	1 month	1-2 stakeholders (National Commission for State Regulation in Energy and Utilities Sectors as well as the Council of Ministers of the Autonomous Republic of Crimea, <i>oblast</i> , Kyiv and Sevastopol City State Administrations certain conditions apply)
17. Establishing regulated tariffs for production and supply of heat	1 month	2-3 stakeholders (SAEE; National Commission for State Regulation in Energy and Utilities Sectors as well as the Council of Ministers of the Autonomous Republic of Crimea, <i>oblast</i> , Kyiv and Sevastopol City State Administrations if certain conditions apply)
TOTAL 17 Stages	Up to 21+ months	25-30+ (stakeholders involved in more than one stages are counted only once)

ANNEX B: METHODOLOGY AND PROJECT APPROACH

This note presents the analysis conducted by the OECD in consultation with the public-private Working Group on Renewable Energy chaired by the State Agency for Energy Efficiency and Energy Savings of Ukraine (SAEE). The Working Group is composed of representatives of government, private sector, civil society and international experts, and has met regularly to discuss the issues and facilitate knowledge-sharing with OECD countries. The project is aimed at increasing competitiveness in the country by fostering investment in renewable energies, with a focus on biomass as a high potential sector in Ukraine.

Several consultations with Ukrainian stakeholders were held throughout the project. Past meetings and capacity building events have been held both in Ukraine and abroad, as from the following timeline:

- **26-28 March 2013:** fact-finding mission to Kyiv and 1st Working Group meeting
- **9-11 July 2013:** fact-finding mission to Kyiv and 2nd Working Group meeting
- **24-27 September 2013:** study visit to Sumy, Ukraine
- **10-12 June 2014:** fact-finding mission to Kyiv and 3rd Working Group meeting
- **14-16 October 2014:** fact-finding mission to Kyiv and 4th Working Group meeting
- **10-12 February 2015:** fact-finding mission to Kyiv and 5th Working Group meeting
- **20-24 April 2015:** study visit to Copenhagen, Denmark, by 12 Ukrainian experts from SAEE, Ministry of Regional Development and Trade, Ministry of Energy, and the Administration of the President of Ukraine (in collaboration with the Danish Energy Agency)
- **20-22 July 2015:** fact-finding mission to Kyiv
- **28-30 September 2015:** fact-finding mission to Kyiv
- **21 October 2015:** workshop on skills in the renewable energy sector, Kyiv

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