



Zentrum
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РЕЙТИНГ

UKRAINE'S PATH TOWARDS A SUSTAINABLE ENERGY SECTOR

Expert Survey with Policy Recommendations
for Decision-Makers and Stakeholders

LibMod Policy Paper



The full study, with further interview-material, can be downloaded here:
https://libmod.de/wp-content/uploads/LibMod_Survey_UkraineSustEnergy_long.pdf

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LIST OF ABBREVIATIONS

CBAM: Carbon Border Adjustment Mechanism

CHP: Combined Heat and Power Plant

DSOs: Distribution System Operators

EBRD: European Bank for Reconstruction and Development

ENTSO-E: European association for the cooperation of transmission system operators for electricity

EU ETS: EU Emissions Trading System

IDPs: Internally Displaced Persons

NEURC: The National Commission for State Regulation of Energy and Public Utilities

NPP: Nuclear Power Plant

REMIT: Regulation on Wholesale Energy Market Integrity and Transparency

TPP: Thermal Power Plant

EXECUTIVE SUMMARY

- The study is based on 52 in-depth expert-interviews. They were conducted in summer 2023 by the Ukrainian research institute “Rating Group” on behalf of the Zentrum Liberale Moderne. Decisionmakers from the energy sector and energy-intensive industry, civil society, and politics (the Government, the Parliament, and local administrations) were interviewed.
- Ukrainian decision makers in politics, industry and civil society have a clear understanding of the urgency of the countries green transformation and – despite all the hurdles and crisis – they have straight-forward ideas of what a post-fossil Ukraine could look like.
- The inevitability of a sustainable modernisation as a part of the EU-integration process is seen by the representatives of all groups interviewed for the survey.
- The respondents understand that – in the long term – the reconstruction of the infrastructure destroyed by the Russian attacks should take place within the framework of sustainability. The reconstruction must be used as an opportunity to further modernise the country and align it with EU-standards.
- A more decentralised power supply is seen as a contribution to the resilience of the communities against Russian attacks on the energy infrastructure.
- Without Ukrainian victory and Western security guarantees, Ukraine and the reconstruction process will constantly live under the threat of further Russian attacks. This scenario not only prolongs the human suffering, but also hinders foreign investments.
- Capacity building is understood as one of the most important challenges: energy experts are needed in companies as well as in all levels of the administration.
- The study shows that communities in Ukraine are the drivers of green transition. Ensuring energy security and saving energy costs are the main motivating factors to do so. Many small and medium-sized towns and cities implement various renewable energy projects and make ambitious plans for decentralisation and modernisation of the energy sector.

INTRODUCTION

The starting point of this study was the question of how Ukrainian decision-makers perceive the discussion on the sustainable reconstruction of their country, what understanding they have of the European Green Deal, and how they understand Ukraine's role in the European green transition. We consider it important to answer these questions in order to align the interests and demands of Ukrainian decision-makers with those of Western partners. In this way, we would like to contribute to the most efficient, sustainable, and rapid reconstruction of Ukraine.

The basis for this study is 52 in-depth expert-interviews. They were conducted in May and June 2023 by the Ukrainian sociological institute "Rating Group" on behalf of the Zentrum Liberale Moderne. Decision-makers from the energy sector and energy-intensive industry, civil society, and politics (the Government, the Parliament, and local administrations) were interviewed. The study does not claim to be representative. It does, however, provide deep insights into the reasoning and perceptions of the interviewees as well as the prevailing thought patterns in the respective sectors. The interviewees answered the questions with great commitment and saw the study as an opportunity to bring Western observers closer to the situation in Ukraine.

When explaining the importance of the green transition for Ukraine, respondents substantiate their position with environmental, economic, political arguments, but also from the point of view of security, both energy security and physical resilience of the energy system.

Impressively, all interviewees agreed that – at least in the long term – reconstruction of the infrastructure destroyed by the Russian attacks should take place within the framework of sustainability. The reconstruction must be used as an opportunity to further modernise the country and align it with the standards of the European Union.

At the same time, it became clear that many immediate contradictions need to be resolved: should damaged infrastructure be rebuilt quickly to provide heat and power to people, or is it better to pursue a sustainable strategy, albeit one that may take more time and resources? Financing, as well as the order in which the measures are to be taken, are also repeatedly addressed.

Furthermore, the study shows that communities in Ukraine are the drivers of green transition. Ensuring energy security and saving energy costs are the main motivating factors to do so. Many small and medium-sized towns are implementing various renewable energy projects and are making ambitious plans for decentralisation and modernisation of the energy sector. It is repeatedly emphasised by representatives of the different groups of interviewees that a more decentralised power supply contributes to the resilience of the communities against Russian attacks on the energy infrastructure: many small power plants are much harder to destroy than a few large ones.

Though, the participants of the survey do not doubt the necessity of the green transition in Ukraine, they do not ignore the many challenges and problems. Hovering over any plans for the recovery and modernisation is the sword of Damocles of the ongoing battles: without Ukrainian victory and Western security guarantees, Ukraine and its reconstruction will constantly live under the threat of further Russian attacks.

The lack of human resources is seen as a major bottleneck for the modernisation and reconstruction of the energy sector. There are too few well-trained experts in the sector. The situation that was critical even before the full-scale invasion has worsened since many professionals are serving in the army, others have left Ukraine or relocated to safer regions within the country. Solutions must be found here, also with the help of Western partners, in order to support the communities but also to be able to fulfil Ukraine's claim to supply the EU with green electricity and to become a Green Energy Hub of Europe.

The Ukrainian central government is also addressed and criticised:

- The non-transparent handling of the National Energy Strategy is criticised, but also the lack of regulations that bring the already adopted laws to life.
- The political influence of a few monopolists remains a problem and an obstacle on the way to a green transition and phasing out fossil fuels, especially coal.
- Instruments must be developed and applied to further liberalise the energy market.
- Civil society organisations and representatives of the regions condemn the fact that they are often excluded from planning processes.
- Corruption in the energy sector remains a challenge and often an obstacle for attracting investments.

In addition to the results of the survey itself and the policy recommendations derived from it for actors in Ukraine and the EU, the interviews reveal another interesting observation: the Zentrum Liberale Moderne had a similar study conducted by the Levada Centre in Russia in May 2021. Despite Russian political elite at this time cautiously opening up to the issues such as climate change and ecological transformation, the interviews were permeated with scepticism about the causes and intensity of climate change. It was perceived primarily as a 'Western' problem that was being imposed on Russia and was threatening its economic foundations. A 'green' economy was generally dismissed by some respondents as 'Western nonsense'. Moreover, both the opposition and those in power lacked an alternative (post-fossil fuel) vision for Russia's future.

The statements of the Ukrainian experts stand in stark contrast to this. There is an awareness of the urgency of transformation and – despite all the hurdles and crisis – there are clear ideas of what a post-fossil Ukraine could look like. The inevitability of a sustainable modernisation is seen by the representatives of all groups interviewed for the survey as a part of the EU-integration process. This contrast makes it clear how much Ukraine has detached itself from Russia and (post)-soviet thinking in this respect as well.

The following is a brief overview of the Ukrainian energy sector, specifics of the research, and a summary of its findings, including policy recommendations for decision-makers in the West and Ukraine. You can download the full study with further interview material here:
https://libmod.de/wp-content/uploads/LibMod_Survey_UkraineSustEnergy_long.pdf



GENERAL SITUATION IN THE UKRAINIAN ENERGY SECTOR

Ukraine's energy system, which previously worked in parallel with the Russian energy system, is a part of this process, as it was separated from the Russian system in February 2022 and synchronised with the European energy system ENTSO-E in March 2022.

Ukraine's existential fight for nothing less than its right to freedom and self-determination in the war of aggression unleashed by Russia also determines its future as a member of the European community and leads to its final and definite emancipation from the Soviet past. Ukraine's energy system, which previously worked in parallel with the Russian energy system, is a part of this process, as it was separated from the Russian system in February 2022 and synchronised with the European energy system ENTSO-E in March 2022. Ukraine, as a member of the Energy Community Treaty, continues the implementation of legislative reforms for the purpose of adapting national legislation to the provisions of the European energy legislation and institutional harmonisation of energy markets.¹

Ukraine as a signatory of the Paris Climate Agreement declared achieving carbon neutrality by 2060 and its determination for a green post-war recovery of the economy and synchronisation of its energy and climate development strategies with the EU's Green Deal.

During the year and a half of full-scale war, energy security has become a critical issue for Ukraine. Since October 2022, the Russian Federation has been systematically shelling Ukraine's energy infrastructure, some of which, such as Zaporizhzhia Nuclear

Power Plant, remain under occupation, and Ukraine has no control over their condition. Just from October 2022 till March 2023, more than 1,200 missiles and drones were fired at Ukrainian energy facilities and networks, at least 250 of them hit their target, and today (summer 2023), according to the Ministry of Energy of Ukraine, about 50 % of Ukraine's energy system has been damaged and some facilities destroyed. There is not a single thermal power plant (TPP), combined heat and power plant (CHP) or hydroelectric power plant in the country that has not been damaged.

Nevertheless, the energy system is constantly being restored, and a key factor in maintaining energy supply in Ukraine is the connection of the Ukrainian power grids to the EU. Regarding the energy demand, most industrial companies have ceased or significantly reduced their operation due to the destruction or risk of attacks. The withdrawal of large energy consumers from the market allowed Ukraine to distribute the existing generation among smaller consumers and helped communities to have access to heat and electricity during winter times.

Just from October 2022 till March 2023, more than 1,200 missiles and drones were fired at Ukrainian energy facilities and networks, at least 250 of them hit their target, and today (summer 2023), according to the Ministry of Energy of Ukraine, about 50 % of Ukraine's energy system has been damaged and some facilities destroyed.

¹ See for further information: Ukraine's Role in the EU's and Germany's Energy Transition: https://libmod.de/wp-content/uploads/LibMod_PB_Ukraine_EnergyTransition.pdf

On the night from the 5th to the 6th of June, the Russian Federation also blew up the dam of the Kakhovka hydroelectric power station, an important power generation and balancing facility in the south of the country. Despite the occupied hydroelectric power plant not operating in Ukraine's power system since October 2022, the catastrophe has disrupted the integrity of the entire Ukrainian hydroelectric power system. For now, however, the situation remains under control.

In the longer term, after de-occupation, the destruction of the dam and the change in the operation of the Dnipro cascade will have a negative impact on the prospects of re-launching other Ukrainian energy facilities, such as Zaporizhzhia NPP and Zaporizhzhia TPP, which are important both for generating electricity for consumers in the region and for the stable operation of the entire industrial cluster in the south and east of the country.

All of the above certainly affects the attitude of the Ukrainian authorities and Ukrainian electricity consumers towards the green transition. It is interpreted both as an opportunity to "build back better" (restoring destroyed facilities and networks to be as energy efficient and as green as possible) and as a security mechanism that leads to a less centralised energy system and promotes small, distributed generation.

Furthermore, the decrease in the industrial production has led to a reduction in emissions, which potentially increases the risks of not adopting more ambitious emission reduction targets. However, the industries themselves are interested in a comprehensive climate legislation because of the Carbon Border Adjustment Mechanism (CBAM) and the prospects of further developing trade relations with the EU.

In his report to the Swiss Parliament in April 2023, Andriy Gerus, Chairman of the Parliamentary Committee on Energy, Housing and Utilities, noted that the Ukrainian Parliament and the Government are focused on restoring Ukraine's energy system, energy efficiency, developing green energy and distributed energy generation, as well as building competitive energy markets and integrating them into European ones. The same priorities have also been articulated by the participants of this expert survey.

At the same time, in the short term, the majority of respondents are inclined to believe that as long as military operations continue in Ukraine, the situation in the country's energy system will be considered primarily in the context of survival and ensuring continuous operation of the energy generation networks and facilities, especially in autumn and winter. This position is not always consistent with the principles of the green transition.

SPECIFICS OF ORGANISING AND CONDUCTING THE STUDY

The in-depth expert-interviews took place in May and June 2023 and covered all groups of respondents identified for the study:

- Central authorities (the Government and the Parliament): 11 interviews;
- Energy companies: 11 interviews;
- Energy-intensive business: 5 interviews;
- Representatives of municipalities: 14 interviews;
- Civil society organisations working in the field of energy and green transition: 11 interviews.

Most respondents were highly motivated to answer the survey questions and noted the importance of assistance from Western partners, the EU, and especially the German government. The respondents interpreted the survey itself as a sign of interest from the EU and especially Germany in the post-war recovery of Ukraine. They also saw the survey as an opportunity to inform Western partners about the state of the Ukrainian energy sector, the existence of various interest groups, and political influence around the restoration of Ukraine's energy system, as well as to report about progress towards the green transition (the latter mainly concerned representatives of central and local authorities).

Representatives of the Government and Civil Society Organisations (CSOs) pointed to a certain inaccessibility of the group of people in Ukrainian politics who decide on the further development and restoration of the energy system. They also emphasised the significant role of the personal factor in political decision-making. Some respondents noted that the companies-monopolists have their own political lobby in the Parliament and the Government and create asymmetries on the energy market.

Among the other categories, businesses proved to be the most difficult to study. Traditionally, the main energy consumers in the industrial sector are metallurgical companies, glass- and cement works. Only five energy-intensive companies agreed to take part in the survey. It is noteworthy that three of them are large companies with modern management and experience in international trade, as well as green transition declared in the companies' mission statements. These companies had specialists who were qualified to answer the interview questions and agreed to do so. As for other companies in the industry, the researchers encountered resistance and refusal to be interviewed. There are several reasons for that:

- The closedness of Ukrainian businesses. Some companies refused to take part in the survey, pointing to the lack of similar communication experience and the unwillingness of the company's management to agree to such interviews, even if they were anonymous.
- Fears and negative expectations. Some companies cited "tough market conditions and competition in the industry" and "industrial espionage" as reasons for not trusting the researchers.
- Irrelevance of the interview questions for the company's specialists. Some companies refused to take part in the survey because the questions were too complicated and "not for them, but for energy specialists". These companies, mostly small enterprises, pointed out that they are not subjects of energy policy making in the country and are not competent to give advice to the Government or the Parliament.

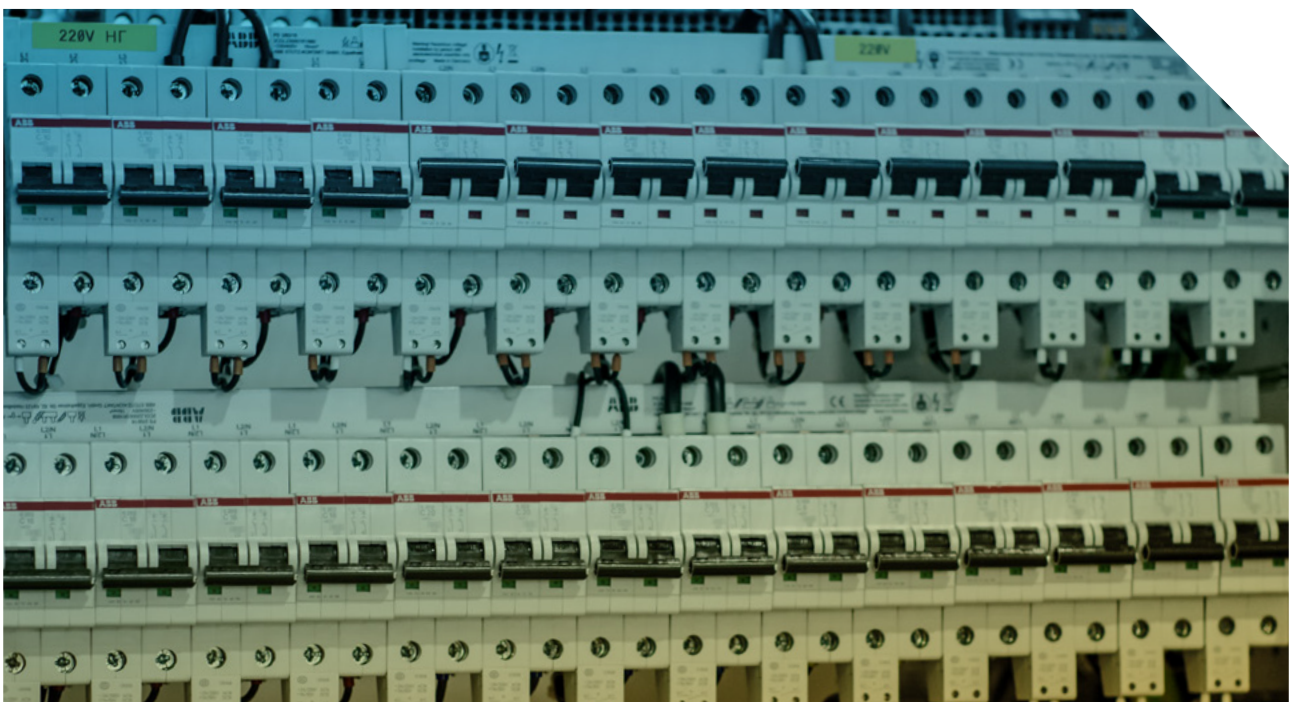
At the same time, there is a great interest of companies, even small ones, in green transition in general and the transition to renewable energy sources in particular. It is reinforced by the motivation to protect production from power outages, which significantly affected profitability during the winter of 2022/23, as well as the motivation to make the company more energy efficient and reduce energy costs.

Businesses are also interested in other issues related to the green transition, such as:

- the CBAM is feared to create unequal trade conditions, which companies that export their products would like to discuss;
- energy efficiency and transition to renewable energy sources;
- generation and sale of surplus green energy to the grid;
- interaction with local authorities, distribution system operators, and other institutions involved in the process of transition to renewable energy locally.

The interest of the companies in green transition is reinforced by outages, which significantly affected profitability during the winter of 2022/23, as well as the motivation to make the company more energy efficient and reduce energy costs.

Furthermore, the category of local government representatives – city mayors, deputy mayors, energy management and energy efficiency specialists in local administrations – proved to be worth of special attention. They were eager to take part in the survey and understood the importance and relevance of the green transition. Almost all the respondents in the category demonstrated a high level of familiarity with the topic, which indicates not only the relevance of the green transition for local governments but also the practical involvement of local authorities in the green transition and energy efficiency projects in their communities.



SUMMARY OF THE SURVEY RESULTS AND POLICY RECOMMENDATIONS

The survey reveals a number of problems and challenges that need to be addressed on the way to the green transition and sustainable reconstruction of the energy sector. In the following we present the main take-aways along with policy recommendations for decision makers in Ukraine and in the EU based on the results of the study.

Sustainable reconstruction between survival and ambition

Respondents from all surveyed categories recognise the green transition as inevitable, linked to Ukraine's European future, declared at the state level, and objectively determined by the reconstruction and renewal of its energy system, which has been and continues to be destroyed by Russian attacks. The extent of the destruction and Ukraine's need for assistance from allies and partners, as well as connection to the European power grid, finally overturned the Soviet logic of designing the energy sector and further encouraged Ukraine to switch to the energy strategies of its European partners, to build the future rather than restore the past.

In general, the arguments for the green transition used by the respondents can be divided into four groups:

- environmental, with the focus on the mitigation of climate change;
- economic, when the green transition is interpreted as a prerequisite for integration into European markets, a general modernisation and a basis for Ukraine's competitiveness in the future;
- political, as part of Ukraine's commitments on its way to EU membership;

- security, when the transition to renewable energy sources simultaneously means decentralisation of generation and thus its physical resilience in times of war and shelling of infrastructure.

While the central government adheres to more conservative scenarios, focusing on the need to survive and keep the energy system working during the war in any way possible, local authorities in the regions further away from the frontline and those where de-occupation has taken place already set more ambitious plans and actions in motion. They are effectively switching to renewable energy sources, are ready to engage in energy efficiency, and are looking for ways to gain energy independence.

Sustainable reconstruction as a matter of security

Security remains a key factor in energy production and supply for most respondents. The Ukrainian understanding of security is distinguished by its existential nature. It is the actual physical security of energy facilities, networks, and personnel involved in the energy sector, which requires engineering solutions in order to find the best location for the facilities, as well as their protection by air defence. The security factor is an additional argument for those who believe that the future of Ukraine's energy system lies in decentralisation and the expansion of the energy grid, which goes hand in hand with the spread of renewable energy sources.

Security in the fullest sense of the word and security guarantees by Western partners are also important factors for further investments in Ukrainian renewable energy capacities.

Security in the fullest sense of the word and security guarantees by Western partners are also important factors for further investments in Ukrainian renewable energy capacities. This is understood by many respondents, and as one respondent puts it: *“Ukraine joining NATO is not only a security issue, but also an economic one, and no less important for the green transition.”*

All respondents name the war as the biggest challenge, along with the already lost generation capacity (this applies not only to nuclear power but also wind power, for example, much of which was destroyed in southern Ukraine).

Moreover, respondents point out that more than half of the Ukrainian population is energy poor. A major reason for this is the huge economic crisis caused by the war. Others are inertia and conditionality of decision-making in the energy sector, which makes a swift and profound transformation of the sector difficult.

Order of the reconstruction.

What to do when there is no time?

Problem: There are competing needs and logics with regard to the short-, medium- and long-term perspectives of reconstruction.

Even during the war, respondents believe that it is possible and appropriate to restore damaged energy infrastructure. In the short-term Ukraine must prepare for the winter 2023/24 and further possible Russian attacks on the energy infrastructure. For this, Ukraine relies to a large extent on its partners for delivering spare parts and equipment. To decide which infrastructure should be just rebuilt and which should be modernised a system of priorities is used. Sustainable development is not the most important aspect for short term decisions. One of the Ministry's representatives explains: *“If, for example, the issue of water for people is acute, green transition is not the first priority. First, water for people, and then we decide whether this well has damaged soil fertility”.*

In those places that are more or less remote from the frontline, it is easier to modernise the energy system. However, there is no unilateral opinion on what to do with damaged TPPs. On the one hand, they are needed to produce heat for the upcoming winter and to stabilise the grid. On the other hand, most of the TPPs are already nearing the end of their service life and repairing them would waste money which is needed for installing green energy capacities. Furthermore, Ukraine has declared a gradual phase-out of fossil fuel sources. Therefore, one respondent remarked: *“Just rebuilding everything that was destroyed is not the right strategy.”*

Solution: In order to solve the dilemma between short-term and long-term needs, the following solutions are suggested:

- A comprehensive audit of the damaged energy infrastructure.
- Using the results of this audit to augment the nationwide Energy Development Strategy.
- Immediate implementation of measures to improve energy-efficiency and -saving to reduce the energy-load.
- If possible, modernisation of some TPPs, that are crucial for energy supply in a particular area, for example by converting them to using natural gas (and eventually green gases) instead of coal, which reduces CO₂ emissions substantially.

Liberalisation of the energy sector

Problem: The Ukrainian energy market is still heavily overregulated and depended on powerful monopolies. As one respondent puts it bluntly: *“Let's be honest, our energy market is very oligarchic”.* Ukraine is living with the legacy of the Soviet planned economy, with production built on centralised networks and fossil-fuelled power generation, all supported by state institutions, not used to competition or customer orientation. Furthermore, the disproportionately cheap cost of electricity in Ukraine for consumers remains a significant reason for the distortion of the Ukrainian energy market. Low tariffs

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distorted the market even before 2022, serving as a source of corruption, preservation of large monopolies, and political populism.

Solution: Despite the Soviet legacy, it is considered possible to establish an efficient electricity market where new generation methods, especially wind and solar generation, can develop and increase their share in the energy mix. Overall, the competition in the energy sector needs to be further promoted, at the same time the monopolistic influence must be prevented and a more straightforward approach to taxing emissions needs to be found: *“The government should take a sober look at things, really look at developing a balance sheet, do everything to make the market work, because the market is not working here today”*, one interviewee declared.

The war made increasing tariffs inevitable. According to respondents, otherwise, Ukraine’s energy system will simply not work. The need for the energy prices to reflect the market value should be accompanied by additional solutions to alleviate the situation:

- subsidising individual consumers rather than subsidising prices,
- improving energy efficiency of buildings and networks,
- stimulating a transparent and competitive market and ultimately,
- changing the behavioural patterns of consumers themselves. Green energy is still seen as quite expensive, but as it is getting cheaper every year, levelized cost of electricity (LCOE) for new renewable projects will soon be lower compared to fossil energy. Tariff adjustment to the

market price, and legislative changes can also significantly improve the amortisation rate of renewable power generation facilities and encourage people to install renewable energy sources both in publicly owned and in privately owned spaces.

- Respondents also noted the need to adopt and implement the EU Regulation on Wholesale Energy Market Integrity and Transparency (REMIT law) aimed at preventing abuse in wholesale energy markets and providing for liability for manipulation of these markets. In this way, the behaviour of market participants will become transparent and there will be competition. Furthermore, different types of generation can use both the price drop during the day and the increase in the price of electricity during peak hours to make market transparent and rebuild the capital expenditure for new generation.
- Some respondents noted that as part of Ukraine’s promised transition to innovative energy sources, a legislative framework for green hydrogen technologies can be gradually created. In case of hydrogen, as well as some other energy sources, the state is partly trying to close the gaps in its legislation.

To cushion social hardship, the liberalisation of the energy sector needs to be accompanied by social policies. Many interviewees underlined the need for just and fair energy sector reforms. Otherwise, the large industrial regions and the many mining towns in the South-East will be left without new sources of income. Especially, because this region is one that suffered the most from the Russian attacks and occupation. As cynical as it may sound, the war made it necessary to rethink the future of the industrial cluster in Eastern and Southern Ukraine.

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Communities and municipalities are drivers of the green transition, but they face a range of challenges

Problem: The voices of the communities and municipalities are not being sufficiently included in the discussion on the recovery strategy. At the same time, the burden of war and the consequences of the Russian aggression are taking an especially heavy toll on communities, either because of the occupation, proximity to the front line or, in case of the regions further away from Russia, migration from other regions. Communities face difficulties, including a lack of qualified personnel, competencies, language skills, project management, experience in attracting investment and cooperation with investors. This, in turn, explains why the reported experiences of communities varies – there are energy-weak and strong communities.

Solution: Most respondents consider communities and municipalities to be drivers of the green transition. Due to the decentralisation reform that began in 2014, they shape the demand for energy and influence the choice of location for industrial and energy facilities, while they have more responsibilities for the local development and much more finance resources. They can decide how and what kind of energy is consumed. Communities in Ukraine are quite ambitious, and local government leaders feel both responsibility and agency in their positions, so communities are interested in being active participants in Ukraine's post-war recovery programmes. This may pose challenges for the future, as decentralisation in Ukraine focuses on cities and communities, while in the EU it focuses on regions as decision-making entities.

Communities in Ukraine are quite ambitious, and local government leaders feel both responsibility and agency in their positions, so communities are interested in being active participants in Ukraine's post-war recovery programmes.

Capacity building is the area, where the EU can efficiently support Ukrainian communities and institutions.

However, communities and municipalities actively master those challenges:

- Improving energy efficiency in the communities is a direct task of local self-governance, as stated by both the interviewed community representatives and other survey participants. Part of this problem can be solved by civil society institutions that can support communities and energy investors. In Zhytomyr, for example, new gas infrastructure was built in 2022 to reduce losses in the heating network. By doing this, the city was able to reduce the losses to 4%. In contrast, the Ukrainian average is 12%, and even 20% in Kyiv.
- Communities need laws and regulations that allow them to use available green energy sources more efficiently and provide access to monitoring of consumption of various energy sources. It is also crucial to establish functioning communication with Oblenergo, which is currently quite problematic and makes access to consumption and production data complicated. This underlines the importance of the accessibility of real time data.
- The recently adopted bill #9011-d is aimed at enhancing decentralised grid with renewables as core energy source, introducing net-billing mechanisms for small-scale renewable capacities. Now, this law needs to be well implemented to provide all consumer with a non-discriminative opportunity to be part of the market as active consumer (prosumer).
- Capacity building is the area, where the EU can efficiently support Ukrainian communities and institutions. Improving the management of the energy sector helps to solve the human resources problem. According to respondents, the green transition requires specialists with different education, language skills, and different

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practices and approaches to management and project activities. It is noteworthy that when asked about Ukraine's needs from the EU, expertise, support and training in green transition methodologies, were mentioned as often as financial assistance. Introducing special programs for reintegrating professionals (following the example of CIM² or UN-programs) could help with this problem.

To sum up the objective with the words of one respondent: *"It's not a question of aid or subsidies, but of creating conditions under which innovative infrastructure can develop."*

A transparent and smart governance

Problem: Despite many positive developments, the Ukrainian State still needs to be more open, fair, and transparent. Political risks, corruption, and the influence of monopolies that hinder the development of a competitive energy market remain a critical challenge for the Ukrainian energy sector. Monopolies continue to influence the state's decisions and generally hamper a faster transition to renewables and decentralisation, as they are interested in maintaining their monopoly with large (fossil) generation facilities and concentrated distribution infrastructure. The management of the sector is still heavily dependent on certain high-ranked officials, rather than institutions.

Solution: What is needed is summed up nicely by this quote: *"To change the energy system, Ukraine needs cheaper and more long-term financing, a stable investment climate, good judicial system, law enforcement, and much more."*

- Predictability of the state, openness of its strategies, and fairness of the electricity generation and distribution market remain important for energy-intensive enterprises in the difficult conditions in which Ukrainian industries operate today.
- It was emphasised that the state and the government should ensure the independence of the National Energy and Utilities Regulatory Commission (NEURC), as well as strengthening its institutional capacity and competence.
- CSOs and representatives of the regions demand to be included into planning processes regularly. The problem became apparent after the first recovery strategy was presented in Lugano in July 2022, and persists in London in June 2023 and should be resolved by the Government at the latest while working on the Ukraine Plan for implementation of the "Ukraine Facility".
- Respondents from all interviewed groups highlighted three important functions they expect CSOs to fulfil:
 - education and awareness raising in communities;
 - policy analysis and policy development;
 - monitoring the fairness of the energy market and the quality of decisions made with regard to it.

Those functions are not only important for an efficient transformation of the energy sector, but also for a strong and confident civil society. Some Ukrainian CSOs have positive experience in cooperation with the state on harmonisation of Ukrainian legislation with the European one, and both authorities and CSOs consider this cooperation valuable and constructive.

Example: A transparent National Energy Development Strategy

The respondents criticised the lack of transparency from the Ministry of Energy, especially concerning the fact that the National Energy Development Strategy is not publicly available yet. One expert remarked: *"There is a lack of strategies and a common vision. At one meeting, the Germans once told me directly that you cannot sell to the Americans that you are building nuclear power, and to us that you are building green energy. We are communicating. Who do you want to deceive? This also causes distrust."*

For most respondents, it is important to have a national energy development strategy that is available for everyone. Therefore, this document needs to be open to all actors in the energy market. The strategy should be realistic, backed up by reality-based calculations, and with a fixed choice of the generating sectors that Ukraine plans to develop in the future. Such strategy is needed by cities and CSOs, as well as investors and large industrial enterprises.

The lack of clear prioritisation was also a common theme throughout the interviews:

- Will nuclear or renewable energy become the backbone of Ukraine's future energy system?
- What are the measures directed at increasing energy efficiency?
- The respondents emphasise the need for an open dialogue on the major issues of the development of the energy system.

The issue of decentralisation ultimately rests on the issue of energy strategy. Especially, considering that already in 2030, Ukraine will be forced to decommission most of the nuclear power plants because of the end of their service life (which is already prolonged for 10 and, in some cases, 20 years). For Ukraine, where about 50% of generation is provided by nuclear power, this means a huge deficit in power production.

Ukraine as a future Green Energy Hub of Europe

Problem: Ukraine needs future-proof business models, and the EU needs large quantities of clean electricity as well as sustainable gases.

Solution: Ukraine considers itself a powerful partner in future cooperation with the EU in the energy sector. The aspiration to join the EU determines the future possibilities of the Ukrainian energy sector as part of the European one. Ukraine's ambitious post-war plan is to become a "power bank" of Europe, as it has vast potential to increase the generation of renewable energy sources (this has also been emphasised by European partners), for example, solar and wind energy (on- and offshore), sustainable bio-energy, or hydrogen. Thus, there is a large potential for growth, which creates new opportunities for energy export. As one respondent puts it: *"For us, this is a matter of European solidarity, equal partnership, and the fact that we need a common climate-neutral economic policy for the continent, that we achieve these goals in a coordinated manner and together."*

To unlock this potential and attract investors and motivate Ukrainian energy companies to be part of the transition, further action is needed to achieve the goal to export large quantities of energy to the EU:

- The Ukrainian and the EU legislation needs further harmonisation. The diverging legislation poses unnecessary hurdles for businesses in Ukraine as well as the EU. For Ukrainian companies this is especially true in case of the emissions legislation and the setup of an emission trading scheme parallelly to the EU Emissions-Trading-Scheme. At the moment, the lack of capacities to initiate and monitor emission permits makes operating for Ukrainian companies even more difficult.

- A further integration to the European energy system ENTSO-E is needed, including implementing common rules for the joint distribution of capacities at the borders, involvement of NEURC in the work of the European Union Agency for the Cooperation of Energy Regulators (ACER), building the capacity of NEURC to detect and investigate cases of market abuse, definition of the Nominated Electricity Market Operators (NEMO) concept as well as its appointment process and requirements.

The majority of respondents assessed the legal framework for green energy in Ukraine as progressive. The main legislative problem, according to experts, is not the general legal framework, but the regulations that should implement the laws.

- Bylaws based on European practices are needed. Only then a full integration into European markets will become possible.

To unlock the full potential of electricity exports to the West a further liberalisation of the access to electricity and heat grids needs to take place. The biofuels market is also heavily regulated. For example, Ukraine cannot currently export biomethane to Europe because there is a ban on the export of natural gas, and biomethane is not separated from natural gas by regulation.³

³ Biomethane is expected to be excluded from the moratorium by the end of 2023 if the according legislation is passed by the Parliament. See this Policy Paper for more information: https://libmod.de/wp-content/uploads/LibMod_PP_Biomethane_Ukraine.pdf



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The starting point of this study was the question of how Ukrainian decision-makers and other stakeholders perceive the discussion on the sustainable reconstruction of their country, and how they understand Ukraine's role in the European green transition. Answering these questions can help to align the interests and demands of Ukrainian stakeholders with those of Western partners.

In this way, we would like to contribute to the most efficient, sustainable, and rapid reconstruction of Ukraine. The study is based on 52 in-depth expert-interviews with backgrounds in industry, civil society as well as politics.

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