



Zentrum
Liberale
Moderne

Policy Brief:

ACTION PLAN FOR UKRAINE'S ENERGY SYSTEM

by Oleksandr Vizir

LibMod Policy Paper

CONTENTS

Action plan for Ukraine's energy system	3
I. Organizational measures	4
1. Increasing the authorized volume of interstate flows	4
2. Promoting distributed generation within the country and among foreign business owners in Ukraine	4
3. Measures to strengthen corporate governance and internal control	4
4. Abolishing the Public Service Obligation (PSO) and introducing targeted subsidies	6
5. Creating a balancing group for all state-owned generation	6
6. Formation of long-term indicators of the cost of electricity (quarterly, annual)	7
7. Revise the procedure for disconnecting consumers	7
8. Permanent closure and restructuring of state-owned mines	7
II. Measures to settle debts	8
1. Repayment of Energoatom's debt to the Guaranteed Buyer and the Guaranteed Buyer's debt to universal service providers (USP) under PSO for households	8
2. Repayment of the Guaranteed Buyer's debt to RES producers	8
3. Settling the debt to market participants on the balancing market	8
III. Measures to build new generating capacities	9
1. A single coordination center for the deployment of new generation	9
2. Simplifying the connection and commissioning of new generating facilities (temporary measure)	9
3. Installation of generating units at TPP and CHP sites	9
4. Placement of equipment at compressor stations of the Gas Transmission System Operator of Ukraine (GTSOU)	10
5. Installation of energy storage facilities in the subway in Kyiv, Kharkiv, and Dnipro	10

ACTION PLAN FOR UKRAINE'S ENERGY SYSTEM

Russia's constant attacks on Ukraine's energy sector throughout the full-scale invasion have greatly weakened Ukraine's ability to operate. This applies in particular to the targeted attacks of the recent months.

Despite the titanic efforts of energy companies, rolling blackouts have resumed in Ukraine since May this year, primarily due to a shortage of generation capacity. In addition to causing serious discomfort to the population, the lack of electricity puts Ukrainian businesses in a difficult position. This directly affects the budget revenues from taxes, which in turn has implications for the financing of the Ukrainian armed forces. Therefore, support for the Ukrainian energy sector is not only about whether there are lights and warm water in Ukrainian homes, but also about Ukraine's defense capabilities. Another aspect is endangering critical infrastructure that can have catastrophic consequences for the population.

As in all industries, the Ukrainian energy sector is also facing acute resource constraints during the war - this applies to funding, time, human resources, and materials. In such circumstances, it is necessary to have realistic short- and medium-term action plans, as well as to constantly review available resources and the results of their use.

It is essential to make the most of available resources and implement swift and effective (though potentially unpopular) measures.

This analysis focuses exclusively on short-term measures that can address the most pressing problems, given the limited resources available to Ukraine. The proposed measures can be divided into three groups: organizational measures, measures to cover debts, and measures to build new generating capacities.

I. ORGANIZATIONAL MEASURES

These are measures that will mostly require human capital (organizational skills in specialized agencies) and a minimum of financial resources.

1. Increasing the authorized volume of interstate flows

There are vast changes in the stability parameters of the Ukrainian power system due to the destruction of generation in Ukraine. Therefore, it is necessary that Ukraine communicates with ENTSO-E (European Network of Transmission System Operators for Electricity) to increase the possibility of imports of electricity to Ukraine beyond the current volume of 1.7 GW.

This measure is extremely important and may allow Ukraine to partially replace its own destroyed generation with imports. In addition to its critical role in maintaining the functioning of the Ukrainian energy system, this measure is also beneficial for EU countries, as this volume of electricity will be sold in Ukraine, which profits EU electricity producers.

This increase in the authorized crossing capacity can be implemented for a certain period and then returned to the previous state. However, it is very important to do this quickly and before the start of the autumn-winter heating season of 2024/2025.

The result: possibility of increasing imports to Ukraine to meet existing and potential electricity shortages.

2. Promoting distributed generation within the country and among foreign business owners in Ukraine

The development of distributed generation should be one of the main priorities for Ukraine. The necessary legal framework for that is already in place. The main problem in the development of distributed generation is the consumers' lack of understanding of what it is and how it works and the reluctance of foreign business owners in Ukraine to invest in Ukrainian assets. Many proposals exist where businesses themselves do

not have to spend money, but third parties make the investment in distributed generation directly connected to such businesses. Accordingly, it is necessary to promote and encourage businesses to develop distributed generation on their own or with the involvement of third parties. Foreign businesses could serve as an example of such activities. This could be harmonized with the idea to install generating units at TPP and CHP sites (section III, paragraph 3).

The results: creation of a significant cluster of energy generation and storage facilities on the consumer side, dispersed across Ukraine, less vulnerable to Russian attacks and more cost-effective for the consumer.

3. Measures to strengthen corporate governance and internal control

The state of Ukraine owns the largest assets in the energy sector. Good corporate governance of the state-owned assets is a key to stable operation in the industry. As of today, the selection of independent members of the Supervisory Board and the corporatization of NNEGC Energoatom was finished and the corporatization of SE Guaranteed Buyer is underway (after which the selection of members of the Supervisory Board of this entity will begin). Also, the term of office of 6 members of the Supervisory Board of NPC Ukrenergo will expire in late 2024 – early 2025.

At the same time, the selection of supervisory board members in Ukraine has a fundamental problem. The procedure for selection and appointment is as follows: a recruiter is appointed, who then selects candidates (from 3 to 5 for one position of an independent member), the recruiter submits the shortlist to the Ministry of Economy for consideration by the Committee for the Appointment of Heads of Enterprises of Particular Economic Importance (which includes representatives of international organizations and whose quality is not questioned). The problem with the procedure lies in the selection and payment for the recruiter's services, since the company for which the supervisory board members are being selected pays for the recruiter's services.

In other words, the company's management can influence the selection of the recruiter. In companies where there is a de facto independent supervisory board involved in the recruiter selection process, the risk is lower. It would be more appropriate to select the recruiter centrally, for example, by the Cabinet of Ministers of Ukraine (through the Secretariat) and that the state pays for the services.

At the current stage, to speed up this process, it is also possible to turn to international donors to pay for the cost of the recruiter's services and to review their selection (in accordance with the requirements of such organizations to the public procurement procedure). Such situations have already occurred, for example, when appointing a recruiter to select candidates for the position of a member of the Executive Board of NPC Ukrenergo. USAID paid for the services and set additional requirements for the tender documentation.

Therefore, implementing a process whereby the recruiter is paid for by donor funds and the requirements for the recruiter are agreed upon with the donor, is a very quick and effective solution. This approach will ensure the selection of truly independent members to supervisory boards, which will qualitatively improve the management of companies in the industry. Immediate measures should be:

- A)** NNEGC Energoatom: Ensuring that company's newly elected supervisory board works independently considering the fact that the selection process was constantly delayed for unknown reasons, which may indicate an attempt to influence the shortlist by the management of Energoatom.
- B)** SE Guaranteed Buyer: Finalizing the corporatization, inclusion of the company in the list of entities with the mandatory competition process for the supervisory board, announcement of a competition for independent members of the supervisory board. The recruiter is paid for by donor funds, and the requirements

for the recruiter are agreed with the donor. The number of supervisory board members is 7 (4 independent, 3 representatives of the state shareholder).

- C)** Ukrainian distribution networks: Inclusion of the company in the list of entities with the mandatory competition process for the supervisory board. The recruiter is paid for by donor funds, and the requirements for the recruiter are agreed with the donor. Increase the number of members of the supervisory board to 7 instead of 5 (4 independent, 3 representatives of the state shareholder). Another path could be transferring the company to Ukrenergo's management and integrating it into Ukrenergo's corporate vertical.
- D)** NPC Ukrenergo – launching a competition for the selection of independent members of the Supervisory Board in the summer 2024.
- E)** Market Operator – inclusion of the company in the list of entities with the mandatory competition process for the supervisory board. The recruiter is paid for by donor funds, and the requirements for the recruiter are agreed with the donor.

The supervisory boards of all these companies will form internal audit departments that will be accountable to and controlled by supervisory boards. This will make it possible to expand the supervisory board's oversight, as well as the degree and depth of its involvement in the company's activities. But for this process to be effective, it is necessary to create truly independent supervisory boards.

The results: increased transparency concerning the activities of these companies, greater institutional capacities of the companies, and reduced political corruption and pressure on the companies by the authorities.

4. Abolishing the Public Service Obligation (PSO) and introducing targeted subsidies

Prior to the increase in electricity tariffs in June this year, the cost of PSO was estimated at UAH 150 billion – 3,5 billion euro (excluding VAT) per year. Now, the estimated cost of PSO (without an increase in DSO, Distribution System Operators, and TSO, transmission system operator, tariffs) will be UAH 100 billion (approx. 2,3 billion euro) per year. Clearly, the PSO should be cancelled and there should be a switch to targeted subsidies for vulnerable groups of the population.

Unfortunately, the issue of targeted subsidies is not yet being considered at the state level. Targeted subsidies could be organized using a similar mechanism as the payment of COVID-19 benefits.

Dividends paid by Energoatom and Urhydroenergo could be a source of subsidies. For this purpose, it is advisable to provide additional options for dividend payments in the Law of Ukraine „On Joint Stock Companies“. Namely, the possibility of paying dividends in advance, paying dividends not from net profit, but as a fixed income per share. Accordingly, by regularly receiving dividends from Energoatom and Ukrhydroenergo, even monthly, according to the schedule, there will be no need for additional budgetary expenditures. The rest of the dividends of Energoatom and Ukrhydroenergo can be used for defense needs (as opposed to the economically inexpedient construction of additional nuclear power units during the war, which uses up limited resources and will be useful earliest in 5 years).

Another option to finance targeted subsidies are donor funds. However, in this case, such funding should be proportional to the dividends paid by Energoatom and Ukrhydroenergo to the state budget to be used for military needs. This proportionality principle is necessary to avoid unproductive spending by Energoatom and Ukrhydroenergo.

The results: avoiding cross-subsidization and the spending of more than UAH 100 billion (approx. 2,3 billion euro) a year. Preventing the subsidization of people who do not need such subsidies.

5. Creating a balancing group for all state-owned generation

Combining all state-owned power generation assets – NNEGC Energoatom, Ukrhydroenergo, Centrenergo and Guaranteed Buyer (the latter requires amendments to the Law of Ukraine „On the Electricity Market“) into one balancing group will allow for quick unification and harmonization of the schedules of operation and repairs of these generation facilities. In the future, such companies can be merged into one legal entity and become the flagship of the rebuilding of the Ukrainian energy sector, like EDF in France or Enel in Italy. Given the de facto state monopoly on electricity production, the medium-term deficit of Ukraine's energy system, the virtually complete destruction of Centrenergo's capacities and the partial destruction of Ukrhydroenergo's capacities, the balancing group, and subsequently the merged entity, will be able to make the most efficient use of the resources at its disposal.

Such a balancing group may be created based on the JSC “Energy Company of Ukraine” (JSC ECU), if measures are taken to strengthen corporate governance within. Alternatively, this could also be done on the basis of Energoatom after the election of an independent supervisory board and management of this company.

The results: more efficient use of state-owned generation, better planning of production and repair schedules, reduction of personnel involved in electricity trading, the possibility of redistributing cash resources within the group to cover cash gaps and of using internal resources to restore the destroyed generation. Another result is the possibility of investing in Ukrainian raw material assets (uranium and coal mining) without corresponding subsidies for the extraction of such raw materials (combined with paragraph 8 of Section I – closure and restructuring of state-owned mines).

6. Formation of long-term indicators of the cost of electricity (quarterly, annual)

This is realized by selling significant amounts of electricity by state-owned generation for several quarters and a year in advance. It should be implemented alongside with the creation of a balancing group for all state-owned generation (see paragraph 5 in section I). This is necessary because there are no long-term indicators of electricity prices in Ukraine, the only price indicator at the moment is the price of the day-ahead market (DAM). The DAM market itself accounts for less than 20% of the total electricity market. 70% of consumers use a formula based on the DAM price to determine their prices. State and municipal institutions have a fixed price for electricity, but this price is constantly revised due to fluctuations in the DAM price.

The results:

- A more predictable electricity price for all consumers, distribution system operators (DSOs) and transmission system operator (TSO).
- The ability to determine either a fixed price or formulaic pricing in supplier-consumer contracts, which will be the main indicator of the price in the market of bilateral contracts.
- Formation of tariffs of DSOs and TSOs considering the cost of long-term indicators of electricity cost.
- Projected number of subsidies for vulnerable consumers and projected amount of dividends to the state.

7. Revise the procedure for disconnecting consumers

As of now, there are many entities that consume electricity, but their disconnection from the grid is prohibited for differing reasons. This leads to problems in the electricity market and its distortion: producers cannot sell a certain amount of electricity for which there is no buyer, because the consumer does not buy such a volume. Accordingly, this leads to a „hole“ for a certain amount of electricity that is consumed but not

paid for, creating a circle of debts in the balancing market. Among these entities are many municipal and state-owned enterprises, but also private companies. Currently, given the overall shortage of electricity, it is necessary to ensure 100% payment for it.

Amendments to the existing rules should reflect the following logic: if the state or a territorial community wants to identify a certain entity as one whose electricity supply may not be restricted, the state, represented by an authorized body, or a territorial community must either act as a guarantor for such an entity or provide a bank guarantee or other means of ensuring the fulfillment of obligations.

The results: preventing the growth of debts in the balancing market and the abuse by public authorities and local governments of their rights to determine the objects whose electricity supply may not be restricted due to non-payment

8. Permanent closure and restructuring of state-owned mines

Due to the destruction of a significant part of Centrenergo's generation capacity, the market for coal produced by state-owned mines has significantly narrowed. DTEK, Ukraine's largest private energy company, is covering its needs on its own, and its coal consumption has also fallen. As a result, there is a surplus of coal on the market. At the same time, state-owned coal mines are subsidized. It is unreasonable to subsidize a product that is in surplus on the market. It is necessary to restructure the mines by closing some of them and increasing production at others to meet real needs. It is advisable to implement this measure together with the creation of a balancing group for all state-owned generation (see paragraph 5 section I).

The result: USD 100 million saving per year on subsidizing the coal industry.

II. MEASURES TO SETTLE DEBTS

Repayment of debts in all market segments and the prevention of debts resulting from systemic problems are key to the normal functioning of energy markets. Currently, Ukrainian energy markets cannot boast of such a situation. To solve this set of problems, it is necessary to implement some of the organizational measures outlined in Section I, as well as to find financial resources to repay existing debts.

1. Repayment of Energoatom's debt to the Guaranteed Buyer and the Guaranteed Buyer's debt to universal service suppliers (USS) under PSO for households

As of the beginning of May, Energoatom's debt amounted to UAH 25.2 billion (approx. 580 million euro). This debt creates further systemic problems: USS do not pay DSOs and TSOs. DSOs do not carry out the repair program, do not pay TSOs and do not buy electricity to compensate for technological losses, TSOs do not receive money from USSs and DSOs do not pay renewable energy producers in full.

The debt should be settled simultaneously with points made before (3, 4 and 7 of Section I). In addition, it is necessary that Energoatom, which is the main beneficiary of the tariff increase for households, first pay off its PSO debts.

The results: less mutual disputes and claims from market participants, repayment of UAH 10 billion (approx. 230 million euro) of debt to renewable energy companies (RES), UAH 7 billion (approx. 160 million euro) to repay debt on the balancing market, and UAH 8 billion (approx. 185 million euro) of funds for repair companies at DSOs.

2. Repayment of the Guaranteed Buyer's debt to RES producers

The balance of the Guaranteed Buyer's debt to RES producers is UAH 20 billion (approx. 460 million euro). When Energoatom's debt to the Guaranteed Buyer is settled, the balance will be approximately UAH 10 billion (approx. 230 million euro).

The results: the ability to attract private business through debt repayment to install energy storage and new generation. Creation of up to 1 GW of generation or storage capacity, or a certain mix of such technologies, financing of generation development projects on the consumer side.

3. Settling the debt to market participants on the balancing market

Ukrenergo's debt to market participants amounts to UAH 19.1 billion (market participants owe Ukrenergo UAH 31.4 billion and will be partially repaid upon fulfillment of Section II, paragraph 1).

The implementation of this measure is advisable in the context of the proposal to revise the procedure for disconnecting consumers (see section I, paragraph 7), since without a systematic solution to this problem, debts will arise again.

In addition, the repayment of debts to the generation sector (primarily HPPs, TPPs, and CHPs) on the balancing market will significantly improve its financial condition and provide additional financial resources for its recovery and development.

The results: involvement of more participants to create maneuvering capacities and energy storage systems that are not included in the market due to debts in the balancing market. Attracting additional financial resources for HPPs, TPPs and CHPs to restore damaged equipment.

III. MEASURES TO BUILD NEW GENERATING CAPACITIES

As Russia has destroyed more than a half of Ukraine's generation, especially targeting balancing capacities during the last four months, developing of the new (distributed) generation is one of the main priorities, especially before the next heating season.

1. A single coordination center for the deployment of new generation

As of today, resources for the creation of new generation are used very inefficiently. The Ministry of Energy, which currently serves as the single coordination center, needs additional competencies and staff support. Successful coordination of the construction of new generating capacities also requires a high level of trust among donors and resources to accomplish this task. Ukrenergo could also coordinate the deployment of new generation.

Important! When creating a new capacity, it is necessary to immediately consider its further functioning on market conditions in the integrated power system of Ukraine. Some of the equipment will not function after the end of the war and partial restoration of Ukraine's energy system, or is already functioning inefficiently (for example, the installation of a gas piston unit in Borodyanka or a gas turbine unit in Irpin). Therefore, such equipment should not be transferred free of charge to the ownership of Ukraine or Ukrainian entities, but only on a free lease for a certain period. The problem with the free transfer is that the recipients will at some point stop operating such property or will operate it with almost zero CAPEX, which will distort the further development of the energy sector in Ukraine.

The results: deepening coordination of processes to create a new generation in Ukraine, collecting data, possible locations and necessary equipment for construction.

2. Simplifying the connection and commissioning of new generating facilities (temporary measure)

Procedures for connection and commissioning of generating equipment can take 6–9 months, which will make it impossible to use the installed equipment during the heating season 2024/2025. It is proposed to temporarily allow the operation of generating equipment connected under a temporary scheme and without obtaining permits for the commissioning of such equipment for the heating season 2024/2025, with its subsequent adjustment to the general requirements.

To date, work has been done in this area, including the adoption of procedures to simplify the connection to gas and electricity grids. To achieve maximum acceleration, it is necessary to simplify the issue of obtaining permits for construction and commissioning of such facilities for a certain clearly defined period. However, such simplifications can only be implemented if they do not pose security risks.

The results: temporary simplification of these processes, which will accelerate the ability to operate the equipment to be installed. After the heating season, such installations must be put into operation and connected to the grid in accordance with the general rules.

3. Installation of generating units at TPP and CHP sites

All large TPPs and CHPs in Ukraine have been damaged because of Russian attacks. Accordingly, some of the power generating equipment of such plants cannot be used in the near future, and some cannot be restored at all.

All the necessary utilities (water and sewage, gas and electricity supply, and an acceptable power supply scheme) have been laid to the territory of such TPPs and CHPs. This infrastructure remained largely intact after the Russian attacks. It can be used to connect a certain number of smaller generating units like gas piston and gas turbine units. In other words, smaller generating units can be concentrated within a certain radius of the plants, using gas and electricity connections, as well as the power output scheme of the respective TPP or CHP.

This approach will significantly save time for physical connection works. Because of the destruction of TPPs and CHPPs, part of the personnel may be involved in the operation of the newly created generation.

The results: using of the existing infrastructure of TPP/CPP sites and their personnel for the rapid installation of generating equipment.

4. Placement of equipment at compressor stations of the Gas Transmission System Operator of Ukraine (GTSOU)

GTSOU is the operator of main gas pipelines in Ukraine. There are certain locations on these gas pipelines to which it is very efficient to connect gas generation, as all the necessary infrastructure exists to supply gas.

The current legislation allows GTSOU to carry out electricity generation activities until 2029. The GTSOU may also act as an operator of such facilities until the same year. It is necessary to strengthen the institutional capacity of the GTSOU to install gas generation and, along installation of generating units at TPP and CHP sites (see. Section III, paragraph 3), to focus on all possible GTSOU locations.

There are several models for the installation of generation facilities of GTSOU and their further operation: (i) the GTSOU itself will install and operate such generation facilities, (ii) the GTSOU will install such facilities and transfer them to another entity, or (iii) the GTSOU may create a cadaster of locations for the placement of generation facilities and grant the right to other entities to place generation facilities at such locations on competitive terms.

The result: using GTSOU infrastructure to create approximately 300 – 400 MW of generating capacity.

5. Installation of energy storage facilities in the subway in Kyiv, Kharkiv, and Dnipro

The subway is an ideal protective structure for energy storage facilities. If a private business leases a specific slot for the installation of an energy storage facility from the subway and operates as an energy storage operator, such a project has the potential to become commercially successful.

Additionally, there are several large bomb shelters across the country big enough to accommodate trucks (for example, the KARZ plant in Kyiv) and abandoned missile bases – all these locations can be used as potential locations for energy storage facilities that require only power lines to operate.

The result: creation of energy storage systems in a place protected from enemy shelling. The potential for deployment has not been analyzed in detail, but rough estimates suggest hundreds of MW.



Zentrum
Liberale
Moderne

Published July 2024 by

Zentrum Liberale Moderne
Reinhardtstraße 15
10117 Berlin
Germany

+49 (0)30 - 13 89 36 33
info@libmod.de

www.libmod.de