



Zentrum  
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Small Distributed Generation

# **A WINDOW OF OPPORTUNITY FOR UKRAINE: FOCUS ON COMMUNITIES**

by Oleksandr Vizir

LibMod Policy Paper

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## About the author

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Oleksandr Vizir developed the concept of corporatization of SE „NNEGC Energoatom“ and the necessary legislative changes, and later supervised their adoption process. As Head of the SOE Management Department of the State Property Fund of Ukraine, Oleksandr was responsible for the management of SOEs in the energy sector and the implementation of the Law „On the Energy Market“ in such SOEs, including both power generation companies and distribution companies.

Oleksandr Vizir participated in the drafting and legal support of the Law on Amendments to Certain Laws of Ukraine on the Restoration and Green Transformation of the Energy System of Ukraine.

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## ABBREVIATIONS

<b>ABCOA</b>	Apartment building co-owners association – a legal entity established by owners of apartments and non-residential premises in an apartment building to promote the use of their property and management, maintenance and use of common property
<b>ASCAER</b>	Automated system for control and accounting of energy resources
<b>BG</b>	Balancing group in the electricity market
<b>CPO</b>	Central purchasing organization
<b>DAM</b>	Day-ahead market
<b>DSO</b>	Distribution system operator
<b>ESCO</b>	Energy service contracts that provide implementation of energy efficiency projects by energy service companies, including renovation of heating, lighting and building insulation systems
<b>ESS</b>	Energy storage system
<b>MOE</b>	Municipal owned enterprise – Corporatized companies with shares owned by the territorial community, municipal commercial and municipal non-profit enterprises
<b>NEURC</b>	National Energy and Utilities Regulatory Commission
<b>PRB</b>	Party responsible for the balance of electricity
<b>RES</b>	renewable energy sources
<b>SE “Guaranteed Buyer”</b>	State Enterprise “Guaranteed Buyer”
<b>SPP</b>	Solar power plant
<b>TSO</b>	Transmission system operator

## EXECUTIVE SUMMARY

- This policy paper provides practical advice for implementing the Law of Ukraine Number 3220 of June 30, 2023, "On Amendments to Certain Laws of Ukraine on the Restoration and Green Transformation of the Energy System of Ukraine".
- A review of legislative changes relating to activities by the "active energy consumer" and of consumers' use of the self-generation energy-aware decision support model is given.
- Active energy consumers ("prosumers") can produce energy by renewable energy sources and at the same time sell surplus energy to the market.
- Not only households, but also entities under community control can obtain active-consumer status. Furthermore, they can use self-generation support to increase their energy sustainability, attract investment and save energy resources.
- Under the new law possibilities exist to introduce generating capacities with and without funding from communities. The paper provides a list of feasible measures that could be introduced to change way communities procure electricity.
- The new law opens possibilities for a more flexible and balanced energy system. Further measurements need to be implemented to fully exploit the opportunities.

# INTRODUCTION

Renewable energies and storage allow for a new category of actors to enter the energy market. In difference to those who traditionally only consume energy, they also produce energy themselves. This hybrid form of consumer and producer is called a „prosumer“. A new law in Ukraine now allows households, communities, and other actors to take on this role. Prosumers represent a fundamentally new role in the energy system. This policy paper examines the possibilities and obstacles for private households as well as communities.

With adoption of the Law of Ukraine Number 3220, „On Amendments to Certain Laws of Ukraine on Restoration and Green Transformation of the Energy System of Ukraine“ (Law No. 3220), on 30 June 2023, an opportunity for the rapid development of small-scale distributed power generation opened in Ukraine.

While the law introduces numerous innovations to the energy sector, particularly with respect to renewable energy sources (RES), this policy paper centres on a new scheme to support self-generation, as it applies to prosumers. Law No. 3220 uses the term „active consumers“ as a general term that covers energy prosumers. Furthermore, this policy paper also examines the possibility of the use of the support scheme by communities (hromady) to increase their energy sustainability, attract investment and save energy resources. With the law No. 3220 Ukraine implements some of the provisions of the EU’s Fourth Energy Package, including those aimed at supporting prosumers and small distributed generation.

## Reference

The European Union’s Fourth Energy Package, entitled „Clean Energy for all Europeans“. Aimed at organizing the domestic and pan-European energy markets, this package is a set of eight directives laying out mandatory that European Union member states must convert into national laws. Implementation of the Fourth Energy will facilitate the EU’s transition to renewable energy.

The new Energy Package contains rather ambitious goals for greenhouse gas emission reductions, based on the assumption that there will be a sharp increase in renewable energy generation and storage systems being introduced into the markets. This package addresses the emergence of new players in the energy market: prosumers, i.e. entities which both consume energy as final customers and produce it for sale; energy cooperatives, meaning associations of citizens who jointly own energy generation systems; and aggregators, i.e. entities that obtain energy from multiple producers in order to then sell it to consumers. Ukraine has an obligation to bring its domestic legislation in line with Fourth Energy Package requirements by the end of 2023.

At present, work is underway on secondary legislation enabling the full implementation of Law No. 3220 while also instituting structural changes.

The paper consists of two parts. The first part offers a review of legislative changes relating to activities by the “active energy consumer” and of consumers’ use of the self-generation energy-aware decision support model. It examines the relationship between an active consumer who uses self-generation support and their electricity supplier, as well as the limitations imposed on consumers and additional incentives in the self-generation support scheme. The first part also includes the possibility for an active consumer to allow the installation of a third-party owned generation system on its premises, and the potential for active consumers to use energy storage systems. It then describes the process of obtaining and using a guarantee of origin for electricity generated from renewable energy sources by consumers and the possibility for apartment building co-owners

associations (ABCOAs) to obtain active-consumer status. Finally, the author points out grey areas associated with the concept of the “active consumer” where regulation is needed.

The second part of this paper focuses on the possibility for entities under community (hromada) control to obtain active-consumer status as well as the possibility for such entities to use self-generation support to increase their energy sustainability, attract investment and save energy resources. To put this into context, the paper also describes the current situation in communities with respect to eligibility for „active-consumer” status and examines the possibility, necessity and consequences of this status for entities that are under community control. This second part then outlines possibilities for the introduction of generating capacities with and without funding from communities and provides a list of feasible measures that could be introduced to change the way communities procure electricity.

## PART I. GENERAL OVERVIEW OF THE ACTIVE-CONSUMER STATUS AND SELF-GENERATION SUPPORT SCHEME

### Acquisition and Benefits of Active-Consumer Status

An active consumer is a private household or an energy cooperative that is an energy service customer (both before and after transfer of ownership of the property installed under the energy service agreement to the customer) that consumes and produces electricity, carries out energy storage activities, sells surplus generated or stored electricity and participates in energy efficiency and demand management activities in accordance with requirements of the law. This only applies if these activities are not professional business activities.<sup>1</sup>

As defined in Law No. 3220, the term “active consumer” covers all energy consumers that

meet the following three criteria:

- 1) they do not intend to carry out professional activities in the power market,
- 2) they have energy generation systems (as of 2029, only using RES) or energy storage systems that are primarily used to meet their own power needs – as will be seen from restrictions discussed below – and
- 3) they feed electricity into the grid. Active consumers enjoy the rights and obligations of regular consumers as well as additional rights and obligations deriving from their status as active consumers.

It is worth noting that the term “active consumer” also applies to certain private households and energy cooperatives that supply power under the green tariff.

<sup>1</sup> Paragraph 32 of Part One of Article 1 of the Law of Ukraine, “On the Electricity Market”

The legal definition of an active consumer is a consumer who:<sup>2</sup>

- concludes an agreement for the sale and purchase of energy under the self-generation scheme;
- enters into an agreement with a guaranteed buyer or a universal service supplier for the sale of electricity under a green tariff (this applies to energy cooperatives and private households that have been supplying electricity under the “green” tariff);
- installs an energy storage system enabling the consumer to participate in the auxiliary services market; to provide balancing services and to buy and sell power used for energy storage in energy storage systems in organized market segments independently or as part of aggregated groups (as a part of virtual power plant).

**Under the self-generation scheme, consumers can install power generation units that will generate more electricity during certain hours than the consumer needs and thus be able to sell surplus power to the grid.**

The legislator has provided a new scheme to support active consumers as the entire volume of power generated but not consumed will be purchased under the green tariff. This scheme is dubbed the self-generation model.

Under the self-generation scheme, consumers can install power generation units that will generate more electricity during certain hours than the consumer needs and thus be able to sell surplus power to the grid. The power supplier of an active consumer will be required to credit the consumer for the purchase cost of the surplus electricity on the basis of the classic net billing scheme. This scheme enables

consumers to install energy generation systems configured in a way that matches their consumption profile in the most cost-effective manner.

It should be noted that the self-generation support scheme for active consumers is fundamentally different from the green tariff support scheme and does not require the entity buying the surplus power (State Enterprise “Guaranteed Buyer”, or a similar local universal service supplier) to register the selling price date. However, the self-generation scheme is designed to create purely commercial incentives for the development of distributed generation in the form of the savings on network fees (TSO and DSO tariffs) for energy generated by systems connected to the consumer’s grids.

To phrase this differently, the incentive for active consumers under the self-generation scheme arises in most cases through the circumstance that active consumers are not charged fees for the distribution and transmission of electricity that they consume that is produced by their own generation systems. Moreover, they can sell this surplus power to their supplier at a contractual price (except in the case of the sale of electricity by consumers such as households and small non-household consumers, in which case the DAM index price applies). These active consumers are not obliged to enter into contracts with SE “Guaranteed Buyer” or with the regional universal service supplier, which makes this support scheme more resilient with respect to system operation and likely to resolve some financial problems.

### **Limits on Active-Consumer Power Generation Unit Capacity under the Self-Generation Support Scheme**

Active consumers using the self-generation scheme are permitted to install energy generation units with capacities at or below the following limits (always subject to the additional requirement that an active consumer’s power generation capacity must not exceed the maximum consumption capacity stipulated in their grid connection agreement):<sup>3</sup>

<sup>2</sup> Part 1 of Article 581 of the Law of Ukraine “On the Electricity Market”

<sup>3</sup> Provided for by Part two of Article 581 of the Law of Ukraine „On the Electricity Market”.

- Private households – no more than 30 kW;
- Small non-household consumers – no more than 50 kW; and,
- Non-household consumers – no more than the authorized (contractual) capacity of the consumer’s power generation installations.

The connection of active consumers’ power generation and/or storage systems to the grid should not lead to deterioration in the standard parameters of the grid power quality and supply security.

In addition, active consumers do not have to obtain a license for power generation and/or energy storage systems with a capacity of up to 5 MW at any one individual metering site, which represents an additional simplification for prosumers.

### **Relations Between Active Consumers and Their Power Suppliers under the Self-Generation Support Scheme**

Typically, there will be times when an active consumer’s power consumption needs will exceed the capacity of their power generation system. At such times, the power supplier with whom the active consumer has concluded an agreement will provide the active consumer with the additional electricity they need based on the agreed tariff. Conversely, in certain periods of time, the active consumer may generate electricity surplus to their immediate consumption needs: this surplus will be purchased by the active consumer’s power supplier.

As noted above, the agreement on the sale and purchase of electricity under the self-generation support scheme takes the form of an annex to the power supply agreement concluded by the power supplier and the consumer. The relationship between the active consumer and the supplier is governed by agreement between the two parties, except in the case of relations between a household consumer and a universal service supplier. The price for electricity sold to an active consumer (the active consumer’s intake from the distribution network) and the price for power purchased from the active consumer (the active consumer’s output to the network) are determined on a free market

basis. When the active consumer is a household consumer and the power supplier is a universal service supplier (the exception mentioned above), the latter purchases the surplus electricity at the price prevailing on the day-ahead market in the billing period (hour). The costs for power output to the grid by an active consumer are credited to that consumer’s personal account.

Law Number 3220 contains provisions amending article 96 of the Law of Ukraine “On Alternative Energy Sources,” which details, among other things, the relations between active consumers and their power suppliers. Relations between

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these entities are based on the net billing model. A typical contract for the sale and purchase of power under the self-generation support scheme would provide for settlement of accounts between the power supplier (or a universal service supplier) and the active consumer on a monthly basis. Specifically, through the hourly balancing of costs for the electricity drawn from and fed into from the grid, including the fees for electricity transmission or distribution during the relevant billing period (month).

If the purchase cost for electricity drawn from the grid by an active consumer during the billing period exceeds the purchase cost of power fed into the grid by the consumer during that period, the active consumer pays the power supplier the difference. Conversely, if the purchase cost of the power fed into the grid during the billing period exceeds the purchase cost for the power



consumed during that period, the power supplier pays the difference to the active consumer in the month following the billing period.

Thus, an active consumer may find it advantageous to install a system that is configured to generate enough electricity to meet, as far as possible, all their own power needs according to their own consumption schedule. Ultimately, the consumer would not pay electricity distribution and transmission fees for any electricity they consume that is generated by their system.

## An active consumer using the self-generation support scheme is free to switch to a different power supplier at any time.

The active consumer can sell a certain amount of surplus electricity to their power supplier, but since the price the power supplier pays for it will be significantly below the retail price, the active consumer will probably try to keep this amount as low as possible. Active consumers will buy electricity from the supplier to satisfy any needs that their own generation cannot supply at the time they need them. If the hourly price of electricity varies significantly over the course of the day, the active consumer may be able to start the arbitration procedure and use energy storage systems, thus save the cost of electricity that would otherwise have to be purchased from the power supplier.

### Active Consumer Restrictions

Limitations are imposed on active consumers to discourage the abuse of the active-consumer status and prevent entities from installing of power generation facilities in locations where there is no real consumption (or where consumption is insignificant).

Thus, an active consumer with an installed power generation capacity of more than 1 MW may lose their active-consumer status for a calendar year if, in the previous calendar year, the volume of power supplied to the grid by their power generation installations exceeded 50 percent of their total power consumption (including consumption both of power drawn from the grid and of power generated by the active consumer's power generation systems).

Generally, active consumers (except for households and small non-household consumers) are subject to a limit on the capacity intended for supply to the grid. The amount of electricity that an active consumer supplies to the grid must not exceed 50 percent of the contractually agreed capacity of the consumer's power generation installations intended for power consumption.

Under Distribution System Code or Transmission System Code, however, if an active consumer meets certain technical requirements set out by the operator of the distribution system or transmission system to which the active consumer's power generation systems are connected, the power capacity intended for supply the power to the grid can be increased under certain conditions. At the time of writing, the NEURC had not yet submitted the draft regulatory documents necessary to regulate these cases.

An active consumer using the self-generation support scheme is free to switch to a different power supplier at any time, although any such change must take effect on the first day of a calendar month.

# ADDITIONAL INCENTIVES UNDER THE SELF-GENERATION SUPPORT SCHEME

## Third Party Power Generation Facilities

An additional mechanism intended to encourage active consumers to engage in a small-scale distributed generation is the right of consumers to connect RES and ESS power generation facilities owned by third parties to their own power grids within the permitted capacity.

In such cases, other actors in the electricity market, including the power supplier of the active consumer in question, perceive the combination of an active consumer and a power generation facility owner as a single entity. The requirements and restrictions established for the active consumer's power generation and energy storage systems also apply to any third-party power generation systems connected either to the grid or to the active consumer's electricity installations.

A consumer who allows the connection of a third-party owned power generation system to the consumer's grid must acquire active consumer status. In addition, a consumer to whose grid such a system is connected must purchase the entire amount of electricity generated by said system. If some amount of this electricity is not consumed, the consumer may sell this surplus electricity on to their power supplier.

consumer will not pay any fees for the network fees (distribution or transmission fees) for this electricity. Relations between active consumers and the owners of the power generation system must be governed by a civil law contract to be concluded between them, i.e. relations between such entities are liberalized to the maximum extent possible.

This additional incentive creates an economically advantageous model of cooperation between a consumer and the owner of the power generation system, in which the consumer obtains electricity at below-market prices, and the owner of the generation system enjoys the benefits of guaranteed sales of the power it generates.

## Use of Energy Storage Systems by Active Consumers

Similarly to the case with power generation facilities, an active consumer using the self-generation support scheme can install and operate either their own energy storage systems (ESS) or those of a third party. Moreover, an active consumer can install an ESS with a capacity as large as the capacity of their connection to the distribution network. In other words, a consumer with a permitted capacity of 500 kW has the right to install power generation facility with a capacity of 500 kW together with a 500 kW energy storage system.

An active consumer need not obtain a license to carry out economic activities in the field of energy storage in order to use an energy storage system. Moreover, by installing an energy storage system, an active consumer becomes entitled to engage in certain activities in the auxiliary services market without such a license: provision of balancing services, purchase, and sale of power from energy storage on organized power markets independently or as part of an aggregated group. An active consumer who does so, however, must ensure separate metering for the power drawn from or fed into the grid by the energy storage facility.

The relationship between the consumer and the owner of the power generation system is to be structured as simply as possible.

The relationship between the consumer and the owner of the power generation system is to be structured as simply as possible. Relations regarding the sale of the generated electricity to the consumer will not be regarded as the supply of power to a consumer within the meaning of the Law of Ukraine "On the Electricity Market". No license will be required. The active

As in the case with industrial ESS, an active consumer who has installed an energy storage system must pay fees for power transmission and distribution services. In this case the calculation of these fees applying to the amount of an absolute difference between the monthly electricity offtake and monthly electricity supply by the energy storage facility is performed separately from the calculation of the transmission and distribution fees applying to the amount of power consumed from the grid by electrical installations intended for power consumption and generation.

### **Guarantees of Origin of Energy Produced from Renewable Energy Sources**

An important aim of the Law No. 3220 is to introduce the possibility for renewable energy producers to obtain guarantees of origin of energy produced from renewable energy sources. Under this law, any entity that produces renewable energy, whether producer or consumer, has the right to obtain renewable energy guarantees of origin.

Thus, an active consumer with a generation system that produces renewable energy has the right to obtain renewable energy guarantees of origin (in form of GO certificates). The active consumer can sell these guarantees separately from the energy or use them to confirm that the corresponding amount of power consumed by the active consumer for its own needs was generated from renewable energy sources.

### **Prospective State Budget Programs to Support Active Consumers**

Law No. 3220 provides for further legislative support, explicitly stating that the state may create further incentives, in addition to those introduced through the “active consumer” status and the self-generation support model. This framework has not yet been implemented, but if it is, it will allow greater engagement by the executive branch in the development of small-scale distributed generation.

Thus, the Law No. 3220 prescribes that the Cabinet of Ministers of Ukraine may establish additional incentives for the installation of systems that produce power from renewable energy sources and the installation of energy

storage facilities by private households under the self-generation scheme. To that end, the Government approves a targeted economic program to incentivize the development of small-scale distributed power generation from renewable energy sources. The Law No. 3220 prescribes that such programme may also include mechanisms to incentivize installation of power generation systems that produce power from alternative energy sources, or the installation of energy storage systems at critical infrastructure sites. The legislation specifies the basic steps and sets of incentives that the programme should include, prudently, leaves open the possibility for further action. Thus, the State’s targeted economic programme to stimulate the development of small scale RES distributed generation will effectively provide reasonable incentives for private households to install solar

**Law No. 3220 provides for further legislative support, explicitly stating that the state may create further incentives**

power generation systems with an installed capacity of up to 10 kW together with energy storage facilities. The capacity of the latter should amount to at least 0.5 kWh capacity for every 1 kW installed power generation capacity. If the Cabinet of Ministers decides to extend this incentive mechanism to cover other groups of consumers, it could specify a different installed capacity ratio (power generation capacity: energy storage capacity) for these groups and define different requirements relating to the generating systems, energy storage systems or additional equipment installed in connection with the power generation system.

Measures included in the programme to boost the development of small-scale distributed power generation from renewable energy sources might involve:

- Reimbursement of interest on loans for the acquisition and installation of a power

Unfortunately, there are currently no economic incentives to encourage condominium associations to acquire the status of active consumers because, like residential consumers, ABCOAs purchase electricity at state-subsidized rates.

generation system to produce energy from alternative energy sources and/or an energy storage facility;

- Partial reimbursement of parts of the interest on loans for the purchase and installation of a power generation facility to produce energy from alternative energy sources and/or an energy storage facility;
- Implementation of other instruments of support according to Cabinet of Ministers decision.

The funding for this programme should be provided from the national and local budgets, international financial and donor organizations in the form of loans and grants, green bonds, as well as from other sources not prohibited by law.

The legislative framework for this kind of support is quite broad, the only limitation being that support can be provided only to active consumers who generate power from RES. As noted above, the aforementioned framework is prescribed by Law No. 3220 but still needs additional bylaws from the Cabinet of Ministers to be implemented.

### **Apartment Building Co-Owners Associations as Active Consumers**

Under Law No. 3200, an apartment building co-owners association (ABCOA) can be regarded as an active consumer if the relevant power generation or energy storage facilities are connected to the power grid of the apartment building, apartments, or non-residential premises. This creates an opportunity for the installation of power generation facilities at residential buildings.

Condominium associations and the owners of apartments and non-residential premises can install power generation units and partially meet the power needs to supply electricity to commonly held areas of apartment buildings – elevators, water pumps, lighting, and more. This offers a way for apartment buildings to become involved in distributed generation from RES and in the development of local energy storage systems, which will be an important factor in ensuring a sustainable energy supply.

Unfortunately, there are currently no economic incentives to encourage condominium associations to acquire the status of active consumers because, like residential consumers, ABCOAs purchase electricity at state-subsidized rates. Thus, the cost of electricity for ABCOAs and residential consumers is UAH 2.64 per kWh (0.065 Euro per kWh), whereas the national average market price for electricity, including the cost of power distribution and transmission, is currently UAH 7.50 per kWh (0.185 Euro per kWh), almost three times higher than the subsidized price.

### **Energy System Benefits Deriving from the Active Consumer and Self-Generation Support Scheme**

The Ukrainian energy market stands to benefit greatly from the installation of automated systems for the control and accounting of energy resources (ASCAER) by active consumers, once this occurs.

Why will this happen? An active consumer who installs a power generation facility intended for electricity production is legally required to ensure metering of electricity produced by their own power generation facility in accordance with the requirements of the Commercial Metering Code, in addition to commercial metering of electricity consumed from the grid/delivered to the grid. This means that active consumers must install a bidirectional meter that can record the amounts of power drawn from or fed into the grid on an hourly basis.

Why is this an advantage? In Ukraine, very few customers have ASCAERs. The requirement to install smart metering devices is limited mainly to new consumers, consumers whose

existing meters have to be replaced, and some other cases stipulated by applicable regulations.

What does this mean for the energy services industry? It means that there are two groups of consumers who pay for their energy differently: consumers who do not have ASCAER (in Ukraine they are called Group B, as opposed to Group A, which is made up of customers that have ASCAER) buy electricity according to a standard rate tariff established in their consumption area, rather than according to their specific consumption needs on the basis of their actual consumption schedule. At the macro level, because of this, in certain regions, primarily industrial ones, the difference between night and day consumption is not as extreme as it is in other regions, where the daytime consumption schedule is many times higher than nighttime consumption. The purchase of power according to power supply schedules in non-industrial regions is generally more expensive than it is in industrial regions. In addition, the cost of electricity distribution in industrial regions is lower. This results in the situation in non-industrial regions (like Chernihiv region) are less successful in attracting new consumers, not because their grid infrastructure is poorer or due to a bad investment climate, but because historically, they do not have consumers who would balance the electricity consumption schedule in the respective region (like for example in Dnipropetrovsk region).

### **Gray Zones Associated with the Active Consumer Concept**

Although the Law of Ukraine Number 3220 “On Amendments to Certain Laws of Ukraine on Restoration and Green Transformation of the Energy System of Ukraine” adequately describes most of the procedures it introduces, it does contain some ambiguity, posing a risk of differences in the interpretation of certain provisions. Thus, secondary legislation is required to address this.

For example, the Law of Ukraine “On Alternative Energy Sources” enables an authorized body, which provides for the issuance of certificates. Those verifying the fact and date of commissioning of an active consumer’s power generation system and attesting to its compliance with the design documentation and its readiness for use (private households or rooftop solar power plants are exempt from this requirement).

The wording in the law does not make clear whether a construction permit or declaration of readiness for operation is required for the installation of a private household-owned generation unit or of a rooftop solar power plants by a non-domestic consumer. Nor do the State Building Codes and regulations provide a clear-cut answer to this question.

The worst-case scenario might be that the energy regulator takes a position diametrically opposed to that taken by the construction industry regulator.

Another grey zone in Law No. 3220 is the reference to the provision in the second part of Article 581 of the Law of Ukraine “On the Electricity Market”, which stipulates that the connection of generating facilities and/or storage facilities of active consumers should not have a negative impact on the standard parameters of the power quality and supply security in the grid. Declarative in nature, this provision does not describe how this situation should be regulated. How must an active consumer prove that their electrical installation does not cause a deterioration in the standard parameters of power quality. What steps can be taken if such parameters are violated through no fault of the active consumer? Thus, this matter must be the subject of careful and focused regulation through the secondary legislation to be adopted by the NEURC. The same provisions should be further replicated in the acts issued by both distribution and transmission system operators (DSOs and TSOs).

## PART II. ACTIVE CONSUMERS IN THE COMMUNITIES.

### Effective Implementation of the Self-Generation Support Scheme

In the previous section, we described the active consumer concept in conjunction with the self-generation support scheme. We now turn to look at how this model can be implemented in communities. In this context, we will examine what steps need to be taken to optimise the usefulness of this model as tool at the community level.

The self-generation support model is likely to bring benefits in three areas to communities that decide to avail themselves of it:

- (i) security of the power supply, through strengthening the resilience of the system in cases of power outages;
- (ii) economic effect, or savings on electricity for community entities; and,
- (iii) investment, through attracting investments to the community.

To understand how this can work, we analyse the current situation and, in light of existing and prospective changes to legislation, make suggestions for the most effective implementation of this model.

### Review of the Current Situation

Currently, communities are not actively involved in the implementation of the active-consumer model. Hence, communities currently buy the power needed using market tools, within the restrictions under public procurement law. Thus, each individual entity that is under community control, such as corporatized companies, municipal owned commercial and non-commercial enterprises, hereinafter referred to as the MOE, must buy power on an individual basis. Each of these entities may purchase their supply of energy at a different price and under different terms. Moreover, MOEs are mandated to maintain a staff of employees, who, among other things, are expected to have relevant experience in energy procurement.

Not all power suppliers are eager to offer power volumes to MOEs, since supplying electricity to MOEs can be more problematic than supplying private-sector entities is. MOEs buy electricity at a fixed price per year, unlike the entities in the private sector, where the tariffs are based on formulas. This would not be a problem if Ukraine had a functioning market with long-term contracts for the power supply. However, there is no such market in Ukraine, and the longest duration of a commercial contract of this kind is one month. Thus, suppliers, unable to predict what it will cost them to supply power to the MOE according to its supply schedule, factor all their commercial risks into the price of their respective bids.

It should be noted that there are no regulatory restrictions on the sale of power on a quarterly/semi-annual/annual basis. The absence of auctions to procure energy for such time periods is explained by existing price caps on the spot market, which are often revised in the middle of the year, not to mention the unwill-

Currently, communities are not actively involved in the implementation of the active-consumer model.

lingness of major electricity producers, both state-owned and private, to hold such auctions.

Without a license, the MOE cannot participate in e-auctions to buy energy, as they are required to purchase the entire volume of power under the public procurement procedure. Similarly, the power generation entity cannot apply to participate in the public procurement procedure as an energy seller, because then they would have to sell the entire volume of the power they generate

at electronic auctions. This is the procedure approved by the Cabinet of Ministers of Ukraine.

What does this mean in practice? The MOE purchases power for its own consumption as a consumer exclusively in accordance with the procedure provided for by the Law of Ukraine “On Public Procurement” using the Prozorro system. In turn, to sell electricity under bilateral contracts (in the long-term contracts market), the power producer is required to use the services of a licensed exchange. The Ukrainian Energy Exchange LLC is currently the only exchange. Thus, in order for the volume of electricity from the energy producer listed in the Ukrainian Energy Exchange LLC to be included in the tender in Prozorro announced by a MOE, there has

to be an intermediary who can buy the volume of power from the Ukrainian Energy Exchange LLC and then sell it through Prozorro. Without an intermediary, the system would not be able to function, yet the presence of an intermediary, or rather the exclusive operation of the system in the presence of an intermediary, is a significant drawback.

Turning back to the structuring of relations between the MOEs and electricity market participants, it is worth mentioning that the party responsible for the energy balance of a given MOE is the power supplier of that MOE. Being a member of a balancing group brings no positive economic effect for a MOE. Therefore, a vast majority of MOEs are not included in aggregated groups.

## WHAT MUST BE CHANGED?

### Communal enterprises as Active Consumers

To get out of the situation described above, a MOE can, like any other electricity consumer, acquire the status of an active consumer and avail itself of the self-generation support scheme. Hospitals, schools, kindergartens: these types of MOEs tend to have enough roof space to accommodate SPPs, as do some other types of MOEs. Some communities have facilities that consume much more electricity – subway systems, other urban electric transport systems, water utilities, sewage treatment plants, and others. The need for electricity to power urban electric transport systems, water utilities, sewage treatment plants and others creates a huge field for distributed generation development.

One of the ways to advance the active consumer model among MOEs is to establish a targeted funding program to help communities to install power generation facilities. In this case, MOEs could create generation systems with the focus on renewable energy within their regular connected capacity. They would consume most of the power generated at the point of generation or close to it, i.e. the classic model of distributed generation. An energy

generation portfolio of this kind could be serviced by a special entity created by the community or by an entity engaged by the community on a competitive basis. This approach would reduce the expenditure to procure energy and, with proper planning, allow the creation of energy islands, which will make the community power system more sustainable.

A second possibility for getting power generation units commissioned to produce electricity for MOEs would be for the community to create a register of locations where an investor could obtain the right to set up a power generation system and connect it to the MOE's internal networks. In this situation, the MOE would be able to acquire the status of an active consumer. A community would be entitled to hold open tenders (on the Prozorro platform or the like) to attract investors to build a power generation facility with a certain capacity at a certain location. Investors would need an undertaking from the MOE under community control to purchase all the power produced by the generation facility at a certain price within a certain period of time. Such tenders could be held either as ESCO (contracts with energy service companies on energy-efficiency projects) tenders or as investment tenders.

In this case, the savings on power purchases would be less than those under the first option, but expenses would be close to zero. Moreover, the transformation of MOEs into active consu-

## Moreover, the transformation of MOEs into active consumers would help attract investment in the region, create jobs and bring additional tax revenues

mers would help attract investment in the region, create jobs and bring additional tax revenues (including revenues from corporate income tax, if local businesses are involved or if the company that owns the power generation facilities is registered in the community).

The most efficient approach would be a combination of the two options described above. In either case, the MOEs save on distribution fees and transmission fees for the entire volume of power consumed from their own production (in the first option) or can make financial plans based on the costs of such power generation for longer time intervals, up to 10-15 years (in the second option). Similar actions can be taken by MOEs in relation to the placement of energy storage facilities.

It is important that MOEs have the ability to sell the surplus power they produce to their power supplier, and to that end, several significant changes need to be made to the model of community power procurement.

### Changing the Power Procurement Procedure for Communities

To implement the proposed changes, a procedure should be in place through which communities can perform bulk power purchases and then distribute the purchased energy among the community entities. To do this, the territorial community must set up a new entity, or designate an existing entity to be the party responsible for the balance (PRB) and the aggregator of all community-controlled MOEs. Currently, no regulatory changes are required to enable a community to establish a PRB or delegate the

balancing function to a designated community entity. In the case of MOEs that do not have a license in the electricity market, the PRB will be deemed their power supplier.

The PRB will procure power for all MOEs in the community directly or indirectly through the community CPO. As it procures power in larger volumes and on a more even schedule, the PRB will be well situated to obtain the best unit price offer. In addition, having a PRB would lead to savings in a community's financial resources since the PRB, or the CPO, would maintain a staff responsible for procurement and power market operations within their own organization, and thus the community would not have to hire professionals of this kind.

The PRB should have the right to join larger balancing groups that treat it as a single entity in such interactions. In these situations, the PRB should be able to choose whether to act independently or to join larger balancing groups, which would allow it to further optimize the schedules of power generation and consumption.

The volume of power generated but not consumed by MOEs that are active consumers would be purchased by the PRB and sold to other MOEs in the community or in organized segments of the energy market.

As active consumers, the MOEs would be able to install energy storage facilities directly connected to their internal power grids within the MOEs' connected capacity. The PRB, as an aggregator, would aggregate the electrical installations of the MOEs intended for consumption, production and storage of electricity and provide services to NPC Ukrenergo in the auxiliary services market and the balancing market, receiving the maximum income from the existing electrical installations of the MOEs, thereby maximizing the income from the ownership of generation facilities and energy storage facilities.

To implement the above scenario with a CPO for a wide range of communities, it is necessary to reduce the threshold for establishing a CPO – currently, only cities with a population of more than one million residents can do so, and therefore this framework cannot be used by most communities. Legislative



changes in this respect are being developed and discussed. There are two models (though a combination of both looks to be the better option in any case): one approach involves lowering the population threshold for establishing a CPO, and the other is to allow two or more communities to create a joint CPO. Implementation of these changes would, firstly, allow for the widespread establishment of CPOs, and secondly, increase cooperation between those communities with joint CPOs.

## To implement the proposed changes, a procedure should be in place through which communities can perform bulk power purchases and then distribute the purchased energy among the community entities.

The second obstacle to the implementation of the above model lies in the NEURC secondary legislation. The point is to allow one balancing group to be part of another balancing group and to treat the other balancing group as a single entity within the balancing group. In commercial balancing groups, this may be possible to resolve at the contractual level, but it would be useful to formalize this possibility.

Why is this necessary? This is to ensure that communities, when creating their own BG and joining another, receive the maximum economic benefit that being part of the BG can provide and use the available power resource to cover

their own needs. Another point is to ensure that community-controlled entities can quickly move from one BG to another – in fact, it will be their PRB that is transferred.

### Additional Legislative Changes Necessary

Full implementation of the planned models will be possible if certain legislative changes are instituted. Without these changes, the progressive movement of communities towards the development of the active consumer model will still be possible, but its effects will be much less powerful.

To update the legal framework, the following changes will have to be implemented:

1. Amend the Law of Ukraine “On Public Procurement” so that that each individual MOE will have the right to purchase power from the PRB, provided that the PRB purchases power using the public procurement mechanism, or directly from the producer, if such power producers are obliged to sell electricity at auctions, the procedure for which is approved by the Cabinet of Ministers of Ukraine. Responsibility: The Verkhovna Rada of Ukraine.
2. Amend the NEURC’s regulations to allow one balancing group to be part of another balancing group as a separate unit. Responsibility: NEURC.
3. Reduce the minimum population necessary for cities and other settlements to be able to establish a CPO. Consider granting permits to communities or their associations to establish CPOs. Responsibility: The Verkhovna Rada of Ukraine.

## CONCLUSIONS

If entities under community control will be able to avail themselves of the self-generation support scheme, this can have an overall positive impact on both the community and the Ukrainian energy system in general.

Should this support model come into widespread use, one can expect communities to see a positive effect in three areas at once:

- i.** Security, through strengthening the resilience of the system in cases of power outages;
- ii.** economic effect, or saving on electricity for community entities; and,
- iii.** investments, through attracting investments to the community. In this case, both the savings and their direct and indirect impact on community revenues (direct - through the sale of electricity, and indirect - through taxation of investors' profits and salaries of employees involved) will contribute to the community well-being, which is particularly crucial for communities that have suffered and continue to suffer from the Russian aggression against Ukraine.



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Renewable energies and storage allow for a new category of actors to enter the energy market. Unlike traditional energy consumers, they can also produce energy and feed it into the grid („prosumers“).

A new law in Ukraine now allows households, communities, and other actors to take on this role. Prosumers represent a fundamentally new role in the energy system.

This policy paper examines the opportunities for prosumers and proposes solutions to the existing barriers, with a special focus on communities.

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