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7 gaps and suggestions for amending the Law 10/2016 on the promoting the use of energy from renewable sources in Moldova

7 steps to democratize the Moldovan electricity market and system

Policy brief

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Contents

INTRODUCTION4

- 1. The need for defining the "independent aggregator" in the Moldovan Renewable Energy Law5
- 2. "Sovereignty" over excess energy for self-consumption.....7
- 3. Expanding the list of members of renewable energy communities.....8
- 4. The need to extend and clarify in the draft Law the concept of "collective self-consumption"9
- 5. Integrating environmental objectives into the country's renewable energy policy planning12
- 6. Extension of the list of electricity storage battery operators to independent aggregators.....13
- 7. Tax incentives for certain energy technologies14

CONCLUSIONS16

RECOMMENDATIONS16

INTRODUCTION

During the period April - August 2023, the Moldovan Government submitted to public consultations the draft amendment of the Law No. 10 of 2016 on the promotion of the use of energy from renewable sources by organizing 6 rounds of dedicated events. It was one of the longest and most transparent consultation processes on a Law in the process of amendment in recent years.

The interest in this Law was sparked by the energy crisis in the region over the past two years, investor interest in large commercial investments and the economic attractiveness of renewable energy technologies in the residential and commercial sectors.

From the perspective of small consumers and producers the draft Law proposes several new concepts and business models such as "aggregators", "energy communities", the definition and modus operandi of "prosumers" or "peer-to-peer transactions".

However, there are couple of issues that have only been surface scratched or not covered at all in the main Law governing the country's renewable energy sector, but which may add value to the draft Law amendment, to the power market and to the local electricity system, and particularly to prosumers, consumers in the residential sector, local communities and SMEs.

This policy brief has identified at least seven gaps in the draft amendment of the Law 10/2016. The scope of this analytical note is to discuss and make pertinent suggestions for improving the draft Law so that the benefits of the energy transition can be felt by as many prosumers and small consumers as possible.

This analytical note has identified at least seven gaps and suggestions in the draft amendment to Law 10/2016 that relate to the following:

- The concept of "independent aggregator";
- "Sovereignty" over excess energy aimed for self-consumption;
- Members of energy communities;
- The concept of "collective self-consumption";
- Integration of environmental objectives with renewable energy policies;
- Operators of battery storage systems;
- Tax incentives for certain energy technologies.

The purpose of this analytical note is to discuss and formulate suggestions for improving this draft Law from the perspective of prosumers and small consumers, which may ultimately contribute to the democratization of energy welfare, democratization of the electricity market and system of the Republic of Moldova.

1. The need for defining the "independent aggregator" in the Moldovan Renewable Energy Law

The "aggregator" is defined in the draft Law No. 10 of 2016 on the promotion of the use of energy from renewable sources (hereinafter Law 10/2016) as a participant in the electricity market that combines the loads of several consumers to be traded, purchased or bid on any electricity market. At the same time, the Law specifies that aggregation services may be offered by the Central Supplier to eligible producers under market conditions.

While the introduction of aggregation is a novelty in the Law and is welcome, it is not sufficient. **The missing link on the aggregation side is the lack of definition in the Law of the concept of "independent aggregator"**¹.

Why would it be advisable to amend the Law No. 10/2016 by introducing the category of "independent aggregator" and to what extent will such an amendment respond to the public interest?

Under the current proposal in the Law, the market for aggregation services would be essentially limited to two categories of monopoly providers. The first monopolist would be the Central Supplier, which is explicitly mentioned in the draft Law as a provider of aggregation services for eligible renewable energy producers (i.e. all those with installed capacities above 10 kW). The second monopolist of aggregation services would be the incumbent electricity suppliers (i.e. the

¹ The category of "independent aggregator" exists both in the legal space and in market realities in the EU. In the EU Directive (EU) 2019/244 concerning common rules for the internal market in electricity, the independent aggregator is defined as a market participant engaged in aggregation that is not affiliated to the customer's supplier and whose main objective is to ensure that the final consumer can fully participate in and benefit from ancillary services and capacity markets. At the same time in the Renewable Energy Directive (EU) 2018/2001 (i.e. the one amending the current draft Act) the notion of aggregator is only tangentially mentioned in the context of energy communities accessing centralised electricity markets through aggregators. A definition of independent aggregator, however, is missing from this Directive. In this way, the authors of the draft Moldovan Renewable Energy Law could easily argue that the notion of "independent aggregator" is rather related to the amendment of the Electricity Law. However, the inclusion of the notion of "independent aggregator" in the draft law on renewable energy is justified for reasons of: (a) Complementarity. Defining and setting the boundaries for the operation of the "independent aggregator" in the market in both the Renewable Energy Promotion Act and the Electricity Act is not a contradiction; (b) Timeliness. The role of the independent aggregator and of aggregation in general is being established precisely against the background of the massive penetration of the market and the electricity system with renewable energy, in particular thanks to decentralised wind and solar energy. Hence the opportunity for the aggregator to offer system services, to do business and to auction energy in various centralised markets. This opportunity arises in particular in the case of excess household and SME PV generation through so-called explicit demand management. In other words, in a perfectly dispatchable system, the role and need for an aggregator in general (and an independent aggregator in particular) would be zero. Its' relevance therefore arises not simply in the context of an electricity market, but first and foremost in the renewable electricity market; (c) Aggregation is not limited to electricity only. Although it is a term that is less often talked about, in advanced centralised charging systems there are also prosumers of heat (see <https://www.frontiersin.org/articles/10.3389/fmech.2021.623932/full>) and aggregators of centralised heating systems (see <https://www.sciencedirect.com/science/article/abs/pii/S0196890403002140>). Concluding, there are sufficient arguments not to limit prosumption and prosumers, aggregation and aggregators (including independent ones) only to the electricity market or only to the Electricity Law.

two large existing suppliers on the Moldovan market Premier Energy and FEE Nord, covering over 90% of the Moldovan retail market). These two retail suppliers could, in principle, provide aggregation services to generators with an installed capacity of less than 10 kW and all other producers benefiting from net metering (and in the future net billing mechanism).

If in the case of the Central Supplier of Energy, the aggregation could somehow be justified, taking into account that, in the absence of centralized markets, the Government wants to monitor what happens to eligible generators rewarded from public resources, then in the case of the free market and installed capacities that are not benefiting from support schemes limiting aggregation services only to retail suppliers² is not justified.

Specifically, what would be the effects of such an omission?

By avoiding defining in the draft Renewable Energy Law the existence of “independent aggregators” the incumbent suppliers may simply benefit from their monopoly and financial position on the market and **“lock in customers with price-based mechanisms (implicit DR) that are difficult to negotiate and prevent the small users in particular from realizing the value of their flexibility”**.³ Similarly, without clear rules from the Energy Regulator the retail suppliers can even charge penalties to final consumers who chose to switch to an independent aggregator. Summing up, by avoiding defining the category of independent aggregator, the Government may involuntarily set pre-requisites for the concentration of the market of aggregation services that should be by definition an open and competitive market.

It should be outlined that “independent aggregators” are acknowledged in the national legislation of 19 EU member states, while the existence of independent aggregation of residential customers has been confirmed in seven member states: France and Finland have the longest experience with this business model, while Romania and Bulgaria have recently started applying it.⁴

In the case of the Republic of Moldova, there would certainly be market space and public interest for the operation of independent aggregators serving a broad category of renewable electricity prosumers (e.g. households, SMEs, large commercial and industrial consumers) based on several reasons:

- a. They have not been awarded the status of eligible producer and they may have some excess installed capacity that they would be happy to offer to an independent aggregator;

² This would actually happen in the absence of the definition of “independent aggregator” in the proposed Law.

³ Saviuc, I., Zabala López, C., Puskás-Tompos, A., Rollert, K., Bertoldi, P., *Explicit Demand Response for small endusers and independent aggregators – Status, context, enablers and barriers*, Publications Office of the European Union, Luxembourg, 2022, doi:10.2760/625919, JRC129745.

⁴ European Commission “EU electricity market transformation is underway: meet the independent aggregators”, JRC, 8 November 2022, https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/eu-electricity-market-transformation-underway-meet-independent-aggregators-2022-11-08_en

- b. They would be looking for additional opportunities to the net billing system;
- c. They are not satisfied with the offer of implicit demand offered by their incumbent (retail) supplier and are looking for explicit demand offers from an independent aggregator (e.g. a money reward for their flexibility);
- d. By having an "independent aggregator", the Government will create a market for consumers and prosumers who do not opt to join an energy community, which is another novelty of the Law.

Clarifying the notion of "independent aggregator" in the Law and eligibility to access various markets will create more liquidity in these markets (e.g. day-ahead and intraday, balancing, re-dispatching and congestion management for TSOs, congestion management for DSOs, other services for DSOs), which would otherwise be limited to a few market participants.

Summing up, the introduction of the notion of "independent aggregator" in the draft Renewable Energy Law would generate more competition for the same range of services, offered by different market participants and at different times of the day, week and season. The ultimate effect would be the creation of more value at the grid edge.

2. "Sovereignty" over excess energy for self-consumption

Article 39⁴ of the draft RE Law mentions that self-consumers of renewable energy placed in the same multi-apartment building have the right to preserve the rights and obligations of final consumers and receive a remuneration in case of support scheme.⁵ This specification in the Law is welcome and necessary, but it is not sufficient.

The draft Law should include an additional point (e.g. letter "e" of the same article) that clearly states that both single-family houses (individual houses) and multi-family apartment buildings have full control over the electricity produced.

What would that mean? In practice, it would mean that residential consumers would have more choices when deciding upon the end use of the energy they produce, as follows:

- a. to consume it entirely themselves;
- b. to sell the surplus through a market support scheme;
- c. to enter into an agreement with an independent aggregator, in particular with those prosumers who do not benefit from any support scheme; or
- d. simply to share the surplus of electricity produced freely with a neighboring household through peer-to-peer transactions.

⁵ See Article 39⁴ (1)(c) and (d) of the version of the Draft Law on Renewable Energy submitted for public discussions on 28 July 2023.

3. Expanding the list of members of renewable energy communities

The draft Law states in the definitions and further in Article 39⁵ that the members or shareholders of a renewable energy community can be natural persons, small and medium-sized enterprises, villages and towns, represented by their executive bodies, final consumers, without excluding vulnerable energy consumers.⁶

While the wording in the draft Law fully transposes the subjects that could become shareholders of energy communities as defined by the Renewable Energy Directive (EU) 2018/2001 and the Internal Electricity Market Directive (EU) 2019/944, Moldovan policy makers could be more flexible and open the door to membership of renewable energy communities to additional subjects such as NGOs, existing energy cooperatives/energy communities and commercial banks.

The participation of the last subject (commercial banks) would be opportune because it could provide additional capital that otherwise would be scarce/unavailable to citizens and municipalities. At the same time, the Law should clearly state that renewable energy communities cannot incur debt.⁷ This would mean that all capital invested by commercial banks in a renewable energy community would automatically be converted into equity. Under this scenario, part of the revenue generated by the local renewable energy community could be reinvested in the expansion of energy infrastructure, while another part would be distributed to shareholders proportionally to their capital investment/financial contribution to the energy community⁸. The countries in the European Union where commercial banks are shareholders of energy communities are Germany and Finland.

Most importantly, the draft Law should stipulate that, in order to prevent "capture" or monopolization of the decision-making process, each member of the renewable energy community would not be entrusted with more than one vote in the General Assembly of the

⁶ See Article 39⁵ (1) (b) of the version of the Draft Law on Renewable Energy submitted for public discussions on 28 July 2023.

⁷ Lending to communities or energy cooperatives could pose additional risks due to high interest rates or bank collateral requirements that could be prohibitive for cooperative development. In addition, in the event of non-payment or late repayment of the loan, the community runs the risk of entering bankruptcy proceedings, which would paralyse all the activities of the energy community. For this reason, conversion into shares would be a more prudent and fair approach towards the lending institution, thus ensuring that the cooperative does not go bankrupt and that the profits obtained are distributed to the shareholders in proportion to the number of shares they hold. Such a measure is applied in Denmark, which since 2009 has prohibited by law the incurring of debt by energy cooperatives.

⁸ If commercial banks are to be considered as shareholders in the energy community, additional provisions should be included in the law (e.g. the maximum number of shares could be limited to 10-20% of the total number of shares) and any additional elements regulating the access of commercial banks to this type of activity, given that the main objectives of an energy community are more about social and environmental benefits than commercial gains.

energy community, irrespective of the number of shares held. In this way, the participatory manner and the internal democracy of the organization would be ensured, based on the principle of "one member, one vote".

The draft Renewable Energy Law should also be amended with other provisions aimed at bringing renewable energy closer to local communities. For example, the draft Law could require that up to 20% of the shares of wind and photovoltaic parks to be built through tenders in Moldova be auctioned and offered for sale to villages and communes within a 20 km radius of their location or to their permanent residents. Such a specification has existed in the Danish legislation since 2009. This will ensure that the benefits of the energy transition are passed on fairly to local communities.

In conclusion, policy makers in Moldova could go beyond the strict wording of the EU Renewable Energy Directive 2018/2001 by becoming more innovative and ensuring more participatory, diverse founding membership and opportunities to raise the necessary capital for this type of investment in social entrepreneurship; while internalizing a practice that actually exists in some EU countries, where NGOs, existing energy communities or cooperatives, and commercial banks can become (member) shareholders.

4. The need to extend and clarify in the draft Law the concept of "collective self-consumption"

The concept of "collective self-consumption" is a relatively new model of energy consumption. This model allows citizens to share self-generated electricity with their neighborhood on a contractual basis, complementing the frameworks of individual self-consumption, energy communities, electricity suppliers, wholesale markets and flexibility markets.

In this regard the draft Law no 10/2016 should provide more details about the scope, area and subjects of the concept of "collective self-consumption" (CSC) of renewable energy. In the draft Law the CSC is defined as "a group of at least two renewable electricity consumers living in the same building or apartment block"⁹, transposing ad-litteram the definition of Renewable EU Directive 2018/2001. **This definition should be expanded as it does not provide sufficient details on the specific type of building. Recent research specifies that the national approaches mostly refer to multi-family houses but also mixed use with offices and/or small and medium-sized enterprises (SMEs). Partly, CSC is also enabled between different buildings.¹⁰ Thus, the area of "collective self-consumption" is not limited to the level of a single multi-storey block or to residential consumers only.**

⁹See the definition of "renewable electricity prosumer acting collectively" from the draft Law 10/2016.

¹⁰ Dorian Frieden et al "Collective self-consumption and energy communities: Overview of emerging regulatory approaches in Europe", Working paper, June 2019, p. 10, https://www.rescoop.eu/uploads/rescoop/downloads/COMPILE_Collective_self-consumption_EU.pdf

Moreover, as it is defined by Solar Power Europe “collective self-consumption (CSC) is a concept for local self-consumption of renewable energy, open to consumers and generators located in a local perimeter where Each CSC entity consists of one or more electricity generator, and one or more electricity off-taker. Citizens, companies and public entities can become generators, for example with rooftop solar, a small wind turbine on local farmland, or a joint PV installation on a local school. In principle, all electricity consumers in the region can become off-takers if they are connected with each other via the public grid or a private connection. Only renewable energy should be shared via CSC”.¹¹ **In other words, CSC is extended beyond the residential buildings to companies and citizens that may own generation facilities outside their place of residence. Similarly, that CSC could be open for single-family houses, schools, hospitals and public buildings from a larger region if they are connected to the public grid or have a private connection. This would suggest that single family houses (individual houses) from rural areas of Moldova could also apply for CSC not only multifamily buildings (which in Republic of Moldova are mostly located in urban areas) as defined by the current draft Law.**

There is important to outline that "collective self-consumption" exists in the legal and operating reality of Portugal and France, while countries such as Belgium, Spain, Lithuania and Slovenia have partially implemented the concept.

Why would "collective self-consumption" be interesting to apply in Moldova?

The overall advantages of CSC proved at EU level, that certainly could be valid in case of Moldova, include: (a) higher returns for generators; (b) open access to participation, independent of housing conditions, and possibility to consume electricity, which is usually significantly lower than supplier prices; (c) collective investment can mobilize additional private financing for renewables; (d) reduction of grid constraints and efficient grid usage; (e) encourages using existing artificial structures and sealed land to deploy renewables.¹²

In the specific case of Moldova, the first and main advantage of applying the "collective self-consumption" framework will be a more attractive alternative model for prosumers compared to the net billing scheme (which is expected to replace the existing net metering scheme) in order to recover faster their investments in the PV system. Similarly, for the collective off-taker (consumer) the attractiveness would be the possibility to pay up to 30% lower retail price through this model, as shown by examples in EU markets.

The second major benefit in case of Moldova relates to the excess capacity of over 10 kW already installed on the roofs of many Moldovan households or SMEs, which will not benefit the "feed-

¹¹ Solar Power Europe (2023) “Regulatory Framework for Energy Sharing”, Solar Power Europe White Paper, p. 5 https://api.solarpowereurope.org/uploads/Final_collective_self_consumption_report_133b88bb28.pdf?updated_at=2023-03-03T13:42:12.001Z

¹² Ibidem, p.4

in-tariff" (a mechanism that could also be abolished). Similarly, "collective self-consumption" would appeal to producers who do not meet the requirements to apply for the tendering system (soon to be launched in Moldova). Thus, both those without the possibility of benefiting from the fixed tariff and those who will not benefit from the fixed price mechanism (i.e. auctions) will find another niche for marketing their surplus renewable energy production.

The third benefit stems from the fact that the implementation of the "collective self-consumption" framework will provide an additional technical and economic solution to tackle the surge of rooftop PV deployment in Moldova. Rooftop solar PV has seen major growth in residential and commercial sectors since 2021, accelerated early 2023 and is a big headache for power system planning and policy-makers in Moldova's energy sector.

Two other elements should be taken into account.

The first element relates to the contractual side. In this regard, **the Moldovan Energy Regulator (ANRE) could add another layer of innovation. For example "collective self-consumption" would be offered on a contractual basis, but the producer should be free to choose which of the consumer should pay the price for the electricity and which of the consumer should receive this electricity free of charge, based on social and solidarity considerations (meaning that the consumer will only pay for the costs of using the grid). However, in both cases, it would pay for the use of DSO system charges.** *The second element* is technical. The technical requirements of "collective self-consumption" observed in other countries illustrate that the perimeter allocated for these transactions is limited to 2 km for low voltage networks and 4 km for medium voltage networks. This would in theory cover the majority of villages in the Republic of Moldova that are usually connected to low voltage networks and have compact geographical locations.

The building blocks for the implementation of the CSC concept include, according to Solar Power Europe¹³:

- Customers should have the right to share the electricity they generate themselves;
- Generation and consumption in CSC should be open to prosumers of renewable energy. Assets owned and operated by public and private entities, on private land or rooftops, should also have the right to enter into a "collective self-consumption" system;
- Participants must have the right to fully or partially transfer the operation of the sharing configuration to a certified representative who is not a market participant;
- Energy sharing should be limited to matching small-scale, local generation with local consumption;
- Distribution System Operators must facilitate energy sharing by setting up the necessary metering infrastructure and balancing at distribution level. The location and perimeter should be aligned with the local grid structure. This will increase the benefit of CSC for grid management;

¹³ <https://www.solarpowereurope.org/advocacy/position-papers/framework-for-collective-self-consumption>

- The National Regulatory Authority should define dedicated, cost-reflective grid tariffs for local energy sharing;
- Sharing energy should not qualify as an activity on electricity markets or as energy supply.

Concluding, a thorough examination of the existing experience and elements of CSC from the states that have fully implemented this system is worth considering by Moldovan policymakers. These elements refer to participation criteria, framework for the legal organization, economic value for participants, integration with electricity suppliers, grid integration issues. This initial piloting and subsequent scale-up of this concept would aim not only to innovate the energy sector in the residential segment of the country but also to speed-up the transition to a cleaner energy system. First and foremost, the energy sharing transactions would contribute together with other innovative models to the democratization of the energy system of Moldova.

5. Integrating environmental objectives into the country's renewable energy policy planning

Streamlining the energy with environmental objectives would be possible by at minimum referring into the draft Renewable Energy Law to the objectives of biodiversity conservation, conservation of aquatic resources, birds and natural habitats. This will ensure that the development of renewable energy targets in Moldova will be done taking into account the protection of water resources, biodiversity and natural ecosystems, where Moldova is particularly vulnerable.

The environmental components are contained in a number of EU directives that Moldova has already committed to transpose and implement under the Association Agreement with the EU or as a contracting party to the Energy Community Treaty (e.g. EU Water Directive, Wild Birds Directive, and Directive on biodiversity conservation).

What renewable energy technologies should take into account environmental objectives?

- *Small-hydropower plants.* Interest in the rehabilitation of some mini-hydropower plants located on the course of the Răut river (e.g. Căzănești, Piatra, Brînzenii Noi) which existed in previous years and could be reactivated in the future. Regional experience (e.g. Bulgaria, Romania and Western Balkan countries) revealed that that small hydro that dammed the rivers put enormous pressure on aquatic ecosystems. A lesson that should be considered by local policy-makers;
- *Medium and large hydropower infrastructure.* Given the fact that there is a clear point of contention between the Moldovan and Ukrainian Governments over the operation of the Dniester Hydropower Complex and the proven negative environmental and social impact of the operation and expansion of this hydropower node, it is important that any modelling and energy policy planning in Moldova (which also incorporates

hydropower elements) include environmental considerations. In that way, Moldova's model of streamlining energy and environmental policies could become an example of integrated renewable energy and environmental governance for other countries in the region when planning or expanding large hydropower infrastructure;

- *Photovoltaic panels.* It is well documented that metals such as lead and cadmium found in solar panel construction are extremely harmful to human health and the environment at high levels. In this respect, the integrated renewable energy and environmental policy should put in place a mechanism to recycle solar panels that are at the end of life or abandoned. Against the backdrop of the massive increase in household and commercial PV installations in Moldova in the last two years, such a mechanism would prevent the emergence of an additional problem to the existing challenges of recycling industrial waste in Moldova;
- *Wind turbines.* Similarly, to the previous point, without a recycling policy and system for decommissioned turbines, the massive imports of second-hand wind turbines in Moldova in recent years risks turning Moldova into a grave yard of obsolete wind technologies and into an uncontrolled environmental and public health problem.

Concluding, Article 1 of the draft Renewable Energy Law, regarding the scope and area of application, could state that objectives related to biodiversity conservation, water, bird and habitat conservation will be duly taken into account when developing secondary legislation and planning renewable energy projects.

6. Extension of the list of electricity storage battery operators to independent aggregators.

The draft Renewable Energy Law limits the right to store electricity to household consumers, cogeneration units and the Central Energy Supplier.

This right should be extended to independent aggregators as well. There are several reasons to allow the operation of electricity storage systems to independent aggregators:

- a. *Firstly*, it is unlikely at this stage that there will be any motivation for domestic consumers and SMEs in Moldova to install storage systems due to the non-existence of centralized markets and hourly tariffs;
- b. *Secondly*, without a support scheme, the price of small-scale storage systems will be prohibitive for prosumers;
- c. *Thirdly*, in addition to the electricity customers that may be approached by this type of market participant, an independent aggregator actually has the expertise and knowledge

to operate storage systems. Excess capacity installed in the net metering system (and, in the future, in the net billing system) can be stored near the place of generation and consumption and subsequently managed by an independent aggregator and against a payment to the prosumer taken and traded on different markets;

Recent studies, with analysis conducted on a per-minute resolution time series on individual household demand illustrated that aggregation of storage led to a reduction in per-house battery requirements by 50% for load-smoothing needs and by 90% or peak shaving.¹⁴ This type of storage use is usually operated by an independent aggregator.

In this way, expanding the pool of market participants who can operate storage systems would be attractive for Moldova considering the boom of household prosumers particularly in the net-metering segment in the past two years, and further expected increase in the near future.

The strongest impetus, however, for amending Law 10/2016 with provisions allowing independent aggregators to offer storage services should be the creation of a competitive market for balancing services, given that such a market is non-existent in Moldova but remains crucial for a decarbonised and demethanised electricity system. An independent aggregator could aggregate the distributed storage and further on trade in on the market to serve this purpose.

7. Tax incentives for certain energy technologies

Apart from "extending existing tax breaks and tax exemptions" to electric vehicles, the draft Law 10/2016 does not mention any other tax incentives for other technologies, especially in the residential segment. There would be at least three additional technologies that could benefit from tax credits to start with: (a) household solar PV; (b) small-scale batteries/storage systems (e.g. for households) and; (c) heat pumps.

A targeted VAT exemption policy or certain elements of tax credits that target over a fixed period of time technologies that are either too expensive, are at an early stage of market penetration or simply are not used in Moldova at the moment will bring social, economic and environmental benefits as well as benefits to the energy system. A detailed study should show more clearly the costs and benefits of such a policy.

In addition, a grant component on top of time-limited fiscal facilities would lead to:

¹⁴ Ryan Kennedy "Energy storage aggregation unlocks benefits for homeowners, grid operators, and installers", 13 July 2021, PV-Magazine, <https://pv-magazine-usa.com/2021/07/13/energy-storage-aggregation-unlocks-benefits-for-homeowners-grid-operators-and-installers/>

- Lower costs and accelerate the internalization of these technologies into the Moldovan energy system in the context of the advent of hourly pricing;
- Activating the market for demand side management services with the growth of distributed and intermittent renewable energy sources and electrification of household energy consumption (e.g. load shaving and load shifting);
- Creating the conditions for the emergence of local production capacities for such technologies in Moldova (in particular for heat pumps and batteries);
- Increasing the social acceptability of the decarbonisation targets set by the Government.

CONCLUSIONS

The last two years have seen a rapid increase in installed renewable energy capacity in Moldova, especially wind and solar PV. This growth has been nurtured mainly due to the feed-in-tariffs, the net metering, and the anticipation of the launch of tenders for large commercial projects to be supported by fixed prices. At the same time, the increase in installed capacity of intermittent renewables (especially domestic and commercial PV) occurred against the background of rising electricity and gas prices, fueled by the decreasing prices of these systems in recent years.

The amendment of Law 10/2016 on the promotion of the use of energy from renewable sources responds to these changes while also aiming to transpose the key elements of the Renewable Energy Directive (EU) 2018/2001.

The Law could be improved by additional innovations and business models aimed at democratizing Moldova's electricity system "at the end of the grid", i.e. towards consumers. The first step for these innovations to take root would be to define them in the energy legislation of Republic of Moldova, including renewable energy legislation.

The key issues to be solved to make these innovations possible remain the creation of the local balancing market, building of infrastructure for imbalance settlement, investments in distribution, metering and balancing infrastructure (hard and soft), which can support these concepts initially through piloting and later through large-scale replication at national level.

RECOMMENDATIONS

- i. **Defining** and framing the operating principles of the "independent aggregator" into the draft Renewable Energy Law;
- ii. **Amending** the draft Law by including the principle of energy "sovereignty" over the excess of energy aimed for self-consumption;
- iii. **Extending** the list of members/shareholders of renewable energy communities and cooperatives;
- iv. **Requiring** large commercial project developers to offer for selling, giving priority to local communities, up to 20% of the shares of a wind and photovoltaic parks expected to be located in their immediate vicinity;
- v. **Extending** and clarification in the draft Law of the concept of "collective self-consumption";
- vi. **Integration** of environmental objectives into renewable energy policy planning;
- vii. **Extending** the list of electricity market participants that can operate electricity storage systems/batteries to independent aggregators;
- viii. **Consider** extending VAT and tax credit elements to emerging energy technologies such heat pumps and batteries that can facilitate the integration of intermittent renewables into Moldova's power system.