Forum Energii

Analizy i dialog

Small steps to big changes

Impact of the "Clean energy for all Europeans" package on power sector

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Foreword

At the end of December 2018, the European Union has agreed on all aspects of the ”Clean energy for all Europeans” package (former Winter Package). It is the largest package of directives and regulations on energy and climate in the history of the Community, which implements the idea of energy union. It consists of eight legal acts. From now on, the Member States have no more than two years to implement them.

In this paper we want to highlight the most important changes introduced by this package. We are focusing on what is important for the Polish power and heating sector. Poland actively participated in the negotiations and accepted the proposals. We have decided on the direction and objectives, and now we need a debate. It is necessary to broadly involve businesses, administration, science and citizens in how to introduce changes for the benefit of society, environment and economy. We are facing big changes, and the Polish energy sector needs investments. The task of the government is to define the process and build a stable regulatory environment to encourage investors to act and to make it possible to secure financing.

Changes can be approached in two ways - they can be treated as God’s blessing or as an opportunity to modernize the energy sector and protect the environment more effectively. We encourage you to use the second option.

Feel invited to join the discussion.

Dr. Joanna Maćkowiak-Pandera

President of Forum Energii

1. Objective of the study

The energy sector is changing right before our eyes. This transition is driven by technological progress, as well as the need to reduce greenhouse gas emissions and greater care of the environment. The reconstruction of the power system creates new challenges. How to increase the use of renewable sources? Will the new system be stable and safe? How much will the energy cost? What will the energy cooperation with neighbouring countries look like? Who and how is to coordinate the energy policy - the European Union or each country separately? Finally, what will be the role of new market participants, including an increasingly active energy consumer?

The EU's response to these energy and climate challenges is the energy union, especially the "Clean energy for all Europeans"[1] package of regulations (former Winter Package). It is a set of legislation that introduces a legal framework for the five dimensions of the energy union, such as:

- improving energy efficiency,
- building a single internal energy market,
- decarbonisation,
- increasing energy security, and
- greater innovation and competitiveness of the European energy sector.

All the elements of the package are now in place. Now it is time to implement them. Not only for the Polish power sector, but also for the heating market it will be a serious test. The Polish energy sector has to face these challenges. This is the only way to make it more competitive and environmentally friendly.

In this study we would like to highlight the most important, in our opinion, changes for the Polish energy sector resulting from the Clean Energy Package.

2. Main conclusions

1. Renewable sources as a foundation for energy production

The European Union is seeking to shift a large part of its energy production to renewable sources - and this is an irreversible trend. The EU's target of at least 32% renewables in 2030 is at the heart of this, with the aim of reducing CO_2 emissions and the implementation of international obligations resulting from the Paris Agreement. Despite the lack of binding national targets, high competences of the European Commission to control the development of RES by the states Member States should contribute to the effective implementation of EU ambitions. Poland will most likely be among the countries that will not meet the 2020 target, but will have to accelerate the development of renewable sources. It will only have an extra year to make up for the delays.

Although new RES units lose their privileges in connecting to the grid, the new market structure is subordinated to the development of RES and its integration with the system. At the same time, power plants based on high-emission fossil fuels, such as coal, will be less and less able to benefit from state aid.

2. Energy is getting closer to the people

A modern EU energy market is expected to unlock the potential of a very large number of small energy producers. Hence, the package introduces and promotes new market players - prosumers, renewable energy communities, individual or aggregated entities, e.g. residents of single-family or multi-family buildings, companies or local

1 https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/clean-energy-all-europeans

authorities. We will increasingly be producing energy for our own use, because it will become easier, especially for distribution system operators. A large role will be played by entrepreneurs and local governments, which will will be able to promote clean energy generation, which is often cheaper than what has been available on the market. And all of this with considerable support, including financial support, from the European Union.

3. A new energy governance model

Implementing energy union means that cooperation at EU and regional level will become the basis for Member States' energy policy making. This is a key change from previous practice. The national energy and climate plans will be a signpost for the sector, investors and all the participants of the transformation. The European Commission and the EU's neighbours will play an increasingly important role in the development of these plans. Regional cooperation in many areas will be obligatory. It will be necessary to learn a new approach to technical issues, e.g. adequacy of resources in increasingly interconnected European energy markets[2]. Political consequences will also be important, e.g. how our neighbours' energy and climate decisions will affect our energy prices, emissions, security of supply and vice versa: how our decisions will affect others. Energy and climate policy can no longer be approached from the perspective of a single country, even if Article 194 of the Treaty on the Functioning of the European Union gives Member States the freedom to decide on the choice of energy sources. It must not be forgotten that the European Union has committed itself to building a single energy market, developing international energy interconnectors and effectively protecting the environment.

Creating a common European energy system is not an easy task, but it will reduce prices. It will enable the transfer of knowledge and experience and enhance security of supply.

4. The inevitability of market reforms in the energy sector

The obligation to introduce further EU market rules will change the Polish energy sector. First of all, the barrier to entry into the market for energy producers will decrease, which will result in the emergence of many new renewable energy sources entities. The changes will cover all levels - from the distribution network to the operation of cross-border interconnections. The task of distribution system operators will be to ensure effective functioning of dispersed sources on the market and to include energy consumers and storage facilities.

Secondly, competition will increase, including cross-border competition. Trade in electricity between countries will increase and will be supervised by newly established Regional Coordination Centres (RCCs). This should lead to rationalisation of costs and better offers for customers. An active and conscious customer, equipped with new rights, will be an essential element of market competition.

5. Keeping prices down

Moving away from regulated prices for households is not only an opportunity to increase competition and open up the market, but also a risk of increasing energy bills.

The increase in prices of CO_2 emission allowances, rising fuel costs, expenditures on new generation and grid units have caused a dramatic rise in energy prices across Europe. The scale of investment in shutdowns, modernisation and the construction of new units is huge. Introducing real competition between energy suppliers can partially contain price increases. The challenge for the government is to put in place effective policy mechanisms that will neutralize these increases. When the use of regulated prices is reduced, this policy will play a central role in the fight against energy poverty and the protection of vulnerable consumers.

2 Adequacy of resources is the ability of the energy system - including the regional power system - to meet future electricity demand.

6. The capacity market as a final solution

The Clean Energy Package limits the granting of public aid to conventional units, in particular coal-based systems, emitting large amounts of CO_2. Firstly, because of the protection of consumers against excessive costs, secondly, by eliminating support for environmentally harmful investments. The capacity market is the last resort, if we prove that market mechanisms, including those at supranational level, do not solve the problem. This approach is based on the assumption that in a single energy market, energy security has a regional dimension, not just a national one. In other words, energy demand should also be met by foreign suppliers and, in crisis situations, countries should support each other in ensuring security of supply. The Polish capacity market will have to undergo a procedure to assess whether the problem of capacity adequacy, this time at European level, still exists. The use of such support mechanisms by states must be accompanied by the introduction of market reforms, including price liberalisation.

3. Key changes introduced by the "Clean Energy for all Europeans"

3.1. More European Union in national energy and climate policy

One of the most strategic changes resulting from the package is the harmonisation of planning and the coordination of implementation of national energy policies at the level of the European Union. This is to ensure that the EU's targets on RES and energy efficiency in 2030 are met. What is more, this should reach to greater effectiveness in reducing CO_2 emissions and increased competition in the energy market, thereby limiting the increase in energy prices for consumers in the EU. The changes will result from new EU instruments and competences, such as:

Integrated national energy and climate plans[3]

As part of the energy union governance, 10-year integrated national plans for energy and climate (NECP) have been established. The first plans cover the period 2021-2030. All Member States will set out in detail how they intend to achieve the common objectives in the five dimensions of the Energy Union (energy efficiency, an integrated internal energy market, decarbonisation of the economy, energy security, research, innovation and competitiveness). The plans focus on meeting the 2030 targets for the share of renewable sources and energy efficiency.

Participation of the European Commission in national planning[4]

The European Commission has been given a special role in the process of preparing and implementing the plans. Member States are obliged to consult the Commission on the preliminary draft of their plans, which assesses them and, on this basis, makes recommendations for changes to the plans. The preparation of the final plans, as well as their implementation and subsequent updating, is also carried out in close cooperation with the European Commission. Member States will also send biennial reports to the Commission on the implementation of the plans, and the Commission will assess them in the light of the overall achievement of EU objectives and commitments.

Control of the preparation and implementation of plans[5]

The implementation of national plans is intended to ensure that Member States effectively implement all dimensions of the energy union. The following mechanisms will achieve this:

3 Articles 3, 4 of Regulation 2018/1999; full text of the cited Regulations and Directives, see annex
4 Articles 9, 13, 14 of Regulation 2018/1999; full text of the cited Regulations and Directives, see annex
5 Articles 9-14, 17-25, 29 of Regulation 2018/1999; full text of the cited Regulations and Directives, see annex.

- verification by the European Commission of the assumptions made by the Member States at the stage of preparing the plans;
- reporting to the Commission on the progress of the plans every two years, starting in 2023;
- monitoring and control of actions and their effects. In the case of RES and energy efficiency targets, the key role will be played by the so-called trajectories showing on the graphs the path of implementation of the national contributions of each country from 2021 to 2030. Too slow progress will trigger radical measures;
- consultations with other countries as part of developing regional cooperation.

Consequences[6]

National plan - commitment for years

The above-mentioned actions mark the beginning of the planning and implementation of national energy policies by Member States at EU level. For the first time, it will be possible to identify and compare the national energy and climate policies of all EU countries. This will allow the European Commission to indicate not only the leaders, but also the countries that are doing worst. The plans are public and prepared according to a single scheme, which ensures their coherence and comparability.

All those who base their strategic actions on national energy and climate policies should take full account of the actions stemming from the national plans, even if they have not yet been implemented into national law. The plans submitted to the European Commission will describe in detail, among others, the development of RES and energy efficiency sectors by 2030. Entities that operate in the power and heating sectors, they will have to closely follow the adopted provisions and their subsequent updates. This will be relevant also for all those planning to benefit from financial support from the EU budget or instruments of European Investment Bank for investments in the energy sector. The mobilisation of EU funds will be consistent with national plans. It is likely that the reference to the tasks included in them will also appear in the recommendations for Member States issued under the so-called European Semesters, which support EU economic governance. The objectives of energy and climate policy will be increasingly included in the tasks carried out within the framework of regional policy after 2020.

Due to its detailed and comprehensive nature, the national plan will in practice become a strategic document for the Polish energy sector, regardless of Poland's Energy Policy until 2040. Moreover, the importance of the national plans is strengthened by a number of mechanisms designed to ensure their effective implementation. Therefore, for many investors, even after the adoption of the government's energy policy strategy for 2040, the provisions of the national plan will be equally important due to their anchoring in the energy union management system.

6 Regulation 2018/1999. Application: from 10.1.2019. (with exceptions - see Annex). Directive 2018/2001. Transposition: by 30.06.2021. Regulation 2019/943. Application: from 1.1.2020, with exceptions, inter alia, from 4.7.2019. - Articles 22(4), 23(3) and 23(6) (for other exceptions, see annex).

3.2. Faster investment in renewable energy sources

The Clean Energy Package will facilitate investment in renewables in both the electricity and gas sectors and heating. Its range of regulations will support the integration of RES in the power system. Renewable sources will be to grow faster than ever before.

Setting a renewable energy target of 32% by 2030 and an additional target for heating and cooling[7]

The share of renewable energy in the EU in gross final energy consumption is expected to reach at least 32% by 2030. Still in 2014, the European Council set the target at 27%, but over time the ambition and level of the target have increased, mainly due to declining investment costs in RES. Moreover, it could be further increased already in 2023 after the evaluation of its implementation. This is a legally binding objective for the European Union, which pursue it through Member States' contributions. It is the first time that a target for the heating and cooling sector has been introduced. It is not binding, but each Member State should aim to increase the share of RES in this sector by about 1.3 percentage points per year[8], or 1.1 percentage points when including waste heat or cooling.

At the same time, waste heat and cold were defined. These are by-products that cannot be avoided in, inter alia, industrial or energy production installations. Without access to district heating or cooling, they would remain unused. As a result of these changes, the operation scope of the guarantee of origin for renewable energy has been extended to heating and cooling, as well as to renewable gas, including hydrogen.

Achieving the RES target under the supervision of the European Commission[9]

Although the package did not adopt mandatory national targets, it created EU mechanisms and tools to ensure their effective implementation as national contributions. They concern both power and heating sectors and include:

1. **Process of preparing and updating national energy and climate plans.** At this stage, all plans are assessed by the European Commission, which examines in particular, whether the contributions from States are sufficient to achieve the Union's objective. The Commission may issue recommendations on amendments to particular elements of the plans. Failure to do so obliges the state to provide a justification, which must be made public.

2. **Reaching paths (the so-called trajectories) to the RES target, i.e. presentations of the pace of contribution implementation in the period 2021-2030.** They are indicative, will be agreed individually with each country, and their starting point is the current targets for 2020. However, they are not arbitrary, as the regulations indicate minimum levels of RES participation in specific years, i.e., the following:

    - in 2022 - at least 18% of the planned (in 2030) increase in the share of RES in a given country over the period 2021-2030,
    - in 2025, at least 43%,
    - in 2027, at least 65%.

    In addition to the mentioned trajectory for the total share of RES, each country will provide estimates of the following paths:

7 Article 3 of Regulation 2018/1999, Articles 2, 3, 19, 23 of Directive 2018/2001.

8 The increase should be indicatively 1.3 percentage points as an annual average calculated for the 2021-2025 and 2026-2030 periods, starting from the level reached in 2020.

9 Articles 4, 5, 8, 9, 13, 14, 17, 20, 29, 31 to 34, 36 of Regulation 2018/1999.

- RES growth by sector - power, heating and cooling sectors and transport,
- changes in demand for bioenergy (from biomass, biogas and biofuels) in the above sectors,
- biomass supply broken down by national or external origin.

3. **Assessment of progress** towards the objectives and actions will be carried out on a biennial basis from 2023 onwards and refer to the recommendations of the European Commission. The Member State's failure to take the recommendations into account requires justification. In addition, the European Parliament and the Council evaluate the national implementation on an annual basis, taking into account information from the European Commission.

4. **The EU RES financing mechanism** will be in place from 2021. It will be financed by voluntary contributions from countries that do not meet the target, e.g. from the sale of CO_2 emission allowances, as well as by funds from the EU, other countries and the private sector. It will finance low-interest loans and grants, including joint projects with Member States and third countries. The energy generated from the sources supported by this mechanism will be included in the statistical data of the countries according to their contributions.

Opening of national RES support schemes to cross-border participants[10]

RES support schemes should be available to participants from countries with direct interconnection networks. The opening of RES support schemes will be voluntary and should be reciprocal. The European Commission estimates that shares in the schemes of the producers from other Member States may amount to at least 5% between 2023 and 2026 and at least 10% between 2027 and 2030. The countries participating in the system decide on the rules of such a share in the agreements, including the rules of counting energy generated as a result of cross-border cooperation. This cooperation is to enable support for joint projects between Member States.

Until 2023, the European Commission will evaluate the implementation of this mechanism, and by 2025, it will assess the costs and benefits of this collaboration.

Union renewable development platform[11]

In addition to the opening of support schemes, the European Commission will set up the Union renewable development platform called URDP, which will expand the possibilities for trading in RES shares between Member States. It will also complement the existing bilateral agreements concluded in the context of the need to achieve the national RES targets for 2020. The platform is to match the demand and supply of energy from renewable sources. Agreements between countries will include statistical transfers, joint projects or joint support schemes. The platform will also support the cost-effective achievement of the 2030 target. The details of its functioning will be laid down in delegated acts.

Priority dispatch for small units of renewable energy sources[12]

The existing priority rights or guarantees of access to the system and the right to dispose of RES units have been limited. Only small installations will retain priority access, i.e. units with an installed capacity below 400 kW (in 2026 this threshold will be lowered to 200 kW) and innovative demonstration projects. Member States may also grant this privilege to units using high-efficiency cogeneration with an installed capacity of less than 400 kW. They may waive or limit this right. However, this is conditional, inter alia, on effective market mechanisms and the achievement of the 2030 RES target path in line with the national plan.

10 Articles 5, 19 of Directive 2018/2001.
11 Article 8 of Directive 2018/2001.
12 Article 12 of Regulation 2019/943.

Entities that have so far benefited from priority access and dispatch prior to the entry into force of the new regulations (before 4 July 2019), can still benefit from them.

RES prosumers as a new player in the European market[13]

The states are obliged to ensure that consumers can become prosumers of renewable energy. The prosumer has the right to produce such energy for his own needs, store it and sell its surpluses. It is protected against discriminatory, disproportionate charges and procedures for energy fed into or drawn from the grid. It can function independently or through the so-called aggregators, which act as certified market participants with the right to trading. This includes residents of single-family and multi-family buildings, although entrepreneurs may also be prosumers, provided that energy production or storage is not their primary activity. Small prosumer installations up to 10.8 kW will be connected to the grid on the basis of of a simple notification. Only for justified technical or safety reasons may the connection be refused.

Renewable energy communities[14]

In order to strengthen the clean energy market, new actors defined as renewable energy communities have been allowed to operate. They may be created by end users, legal entities based on voluntary participation of, inter alia, individuals, small and medium-sized enterprises, local authorities, including municipal bodies. As energy market entities, they gain the right to produce, consume, store and sell renewable energy and may participate in support schemes.

13 Articles 2, 17, 21 of Directive 2018/2001.
14 Article 22 of Directive 2018/2001.

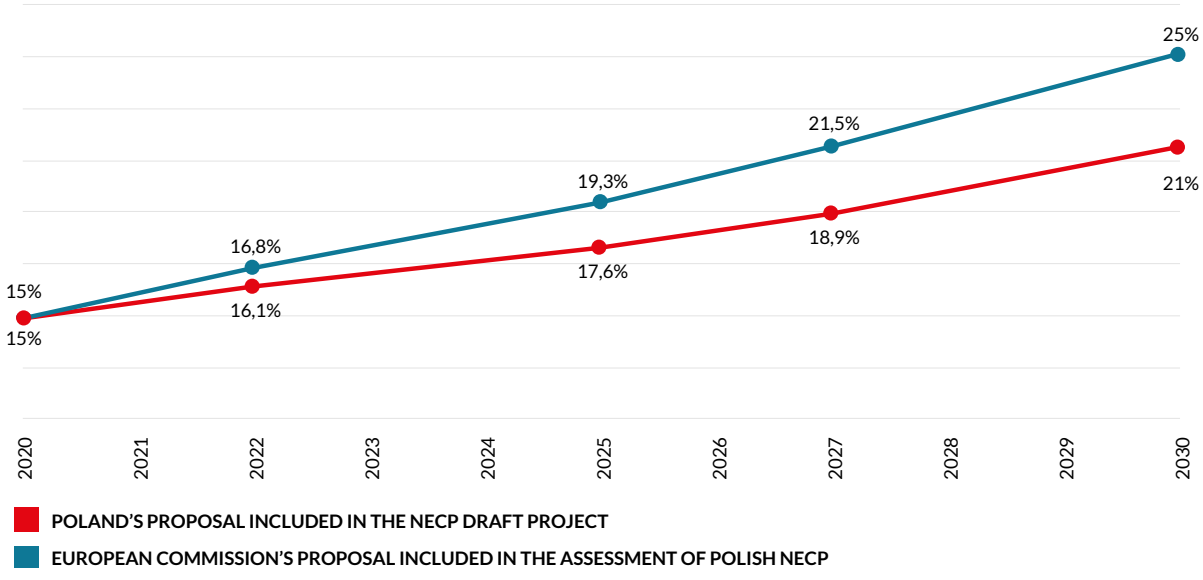
Consequences[15]

Reaching the RES targets for 2020 and 2030

Paradoxically, despite the absence of binding national targets, the methods adopted to achieve the 2030 target should contribute to a faster development of RES in EU countries than in the case of the implementation of the national targets set in the 2020 package. Due to the fact that Poland may not achieve the 2020 target, the provisions relating to Poland and other such countries are becoming more and more important. The new regulations give an additional year (until the end of 2021) to take effective countermeasures. However, if the effects of these measures are not sufficient, the European Commission may, in the worst-case scenario, initiate legal proceedings for violation of EU law. This is the last resort, therefore the countries that failed to meet the 2020 target will probably use statistical transfers, including a new Union renewable development platform. However, the high costs of statistical transfers make it necessary to accelerate the support for RES, which is visible, among others, in Poland. One of the countermeasures will be payments to the EU mechanism for financing energy from RES, although in this case there is a high risk of implementing investments outside the state, which contributed to the mechanism.

The RES target set out in the national plan and its reference in the achievement path, and not in the level of its actual implementation in 2020, mean that the increase in the share of RES will have to be relatively steady in the period 2021-2030. Therefore, Poland cannot postpone the development of RES and rely primarily on the construction of large offshore wind farms in the Baltic Sea. These investments will result in an increase in the share of RES not earlier than after 2025, and in the meantime it will have to be shown at the beginning of the above-mentioned period. Therefore, small prosumer installations and further heating transformation will have an important role to play. One of the main directions of "greening" of this sector will be the development of high-efficiency biomass sources, transferring heat to district heating systems.

Chart. Examples of trajectory - path towards the RES target in 2030.



Source: own elaboration.

15 Regulation 2018/1999. Application: from 10.1.2019. (with exceptions - see Annex). Directive 2018/2001. Transposition: by 30.06.2021. Regulation 2019/943. Applicability: from 1.1.2020, with exceptions, inter alia, from 4.7.2019, Articles 22(4), 23(3) and (6) (for other exceptions, see annex).

New market players

The adopted regulations allow to unlock the potential of the market, mainly by creating new entities - small and medium-size enterprises, who will become prosumers. Their development will be facilitated not only by the regulations of the "Clean Energy" package, but also by extensive institutional and financial support of the EU after 2020. Simplifications for RES prosumers acting individually, in an aggregate manner, or as a community of RES, will be one of the main directions of support within the long-term financial perspective of the EU for the years 2021-2027, as well as instruments of the European Investment Bank. The anticipated effect will be the progressing process of market democratization, in which entities, who have not yet participated in the market, will be promoted. Small RES installations will be able to bring benefits to, among others, residents of single-family buildings, housing communities of multi-family buildings and entrepreneurs. Most likely, the companies that will become prosumers, will be the driving force behind the development of the manufacturing sector for its own use. They will have many opportunities to obtain financial support for the start-up of renewable energy installations. Such producers will not be affected by rising emission allowance prices, which are a significant variable cost for fossil fuel power plants. In addition, companies that choose to become prosumers will benefit from significant savings on the transmission charges, which will be higher than for private customers who pay lower rates. Such conditions seem to be very favourable especially for photovoltaic installations. An increase in the number of prosumer companies will affect distribution. Distribution system operators will have to balance less revenues from companies that become prosumers. This should provoke a discussion on the tariff system taking into account the changes taking place on the market.

Maintaining priority dispatch to installations with an installed capacity below 400 kW is another incentive that will have a positive impact on the creation of small units of RES. However, the lack of such a privilege for larger installations, e.g. wind farms, may give rise to a problem of their operation in periods of low demand.

Towards open cross-border support schemes for RES

Poland will face a decision on whether to participate with other countries in the opening of its RES support systems for energy producers in these countries. Most likely, countries will decide to cooperate with their neighbours in the first place due to the already existing direct interconnections between them. The consequences of the system opening for the Polish sector will largely depend on the support methods offered in Poland and the neighbouring countries after 2021. Cross-border opening of the systems will require the cooperation of operators and the establishment of rules for the coordination of grid use. On the one hand, it may cause investors to migrate to other countries offering more attractive support conditions. On the other hand, the number of external entities participating in the Polish system may increase. In this context, agreements between the countries with defined principles of RES statistical counting will be important. The arrangements will concern, among others, which country and to what extent it will be able to take into account the increase in the share of RES as a result of such support. As a consequence, it should encourage the neighbouring countries to coordinate the methods of supporting renewable energy sources.

In case of insufficient opening of support systems by the Member States, it is expected that the European Commission will introduce countermeasures. The Commission will probably continue to promote this form of cross-border cooperation. Such actions, including legislative proposals, should be foreseen in the context of the European Commission's planned evaluation of the implementation of this mechanism by 2023 and its costs and benefits assessment by 2025.

3.3. Less opportunities to support carbon-intensive energy sector

The energy sector is one of the largest beneficiaries of state aid in the entire European Union. As a result, market mechanisms are often distorted, competition is limited and in many cases state aid is an indirect form of subsidising selected areas of industry. In recent years, countries struggling with insufficient capacity have increasingly used long-term structural support mechanisms (generation capacity mechanisms), mainly capacity markets and strategic reserves. The package limits their applicability, considering them to be last-resort measures and as short-term as possible when other market-based approaches fail.

Prioritising strategic reserve[16]

The package distinguishes between two types of support mechanisms that Member States may put in place as a final measure when there is a problem with the adequacy of resources in the internal power market. These are strategic reserves and all other mechanisms, including capacity markets, such as the one operating in Poland since 2018. The strategic reserve is given preferential treatment. When designing the mechanism, Member States should first check whether it will be an effective mechanism. In order to be considered a strategic reserve, it must meet a number of conditions, including that the resources in the reserve must be outside the market during the term of the agreements. In addition, they do not receive remuneration from wholesale energy markets or balancing markets. Reserves are only available when the balancing resources of the transmission system operators are exhausted.

When to proceed with the design of support mechanisms?[17]

A number of conditions have to be met by a Member State before a generation capacity mechanism can be put in place. One of the basic conditions is that the European Network of Transmission System Operators (ENTSO-E), on the basis of the data from the TSO, provides European resource adequacy assessment (ERAA), which may be complemented by national resource adequacy assessment (NRAA). Once a problem is identified, the state must first address the causes of the problem, including market failures and regulatory distortions, such as removing price caps and regulated tariffs, and increasing interconnection capacity. It must then prepare a comprehensive study on the possible impact of the mechanism on neighbouring countries and then consult with them, at least with those with which it has direct interconnections.

Principles of designing new mechanisms and conditions of functioning of existing ones (including the limit of EPS 550 and 350)[18]

Support mechanisms are temporary measures that may be introduced as a last resort. Their application must be accompanied by the continuation of countermeasures in accordance with a plan approved by the European Commission. The mechanisms must not last longer than 10 years and their scale must be progressively reduced. With the exception of the strategic reserve, they must be open to cross-border suppliers on market principles that do not discriminate against any party. For the mechanisms in place (as of 4 July 2019), countries may allow the participation of interconnections in the competitive process as foreign generation capacities. States review the mechanisms in place. They are required to prepare a the European resource adequacy assessments, possibly accompanied by a national resource adequacy assessment and a recovery plan, provided that the problem is confirmed by an assessment. If the assessment does not confirm this or if the European Commission does not accept the plan of remedial measures, countries may not conclude new capacity agreements under existing mechanisms.

One of the introduced conditions of functioning is the CO_2 emission limit, the so-called EPS. As of 4 July 2019, there is a limit of 550 g CO_2/kWh for new units, i.e. units that do not carry out commercial production before that date. As of 1 July 2025, for existing units (with commercial production before 4 July 2019), there is a limit of EPS 550 and

16 Articles 21, 22 of Regulation 2019/943.
17 Articles 20, 21, 23 of Regulation 2019/943.
18 Articles 21, 22, 23, 26 of Regulation 2019/943.

an additional limit of 350 kg of CO_2 per kWh of installed capacity on average per year. Commitments and agreements concluded before 31 December 2019 are excluded from these limits for the whole period of their validity.

Table 1: Existing CO_2 emission limits under the support mechanisms after 4 July 2019

		GENERATION UNITS (started commercial production before 4.07.2019)	NEW GENERATION UNITS (started commercial production after 4.07.2019)
OPERATING GENERATION CAPACITY MECHANISMS at the date of entry into force of the Regulation, i.e. 4.07.2019	Obligations and agreements concluded before 31.12.2019	Without ENP for the whole duration of the agreements	Without ENP for the whole duration of the agreements
	Obligations and agreements concluded from 1.01.2020 to 1.07.2025	Without EPS for the duration of contracts and commitments up to 1.07.2025	EPS 550 from 1.1.2020
	Obligations and agreements concluded since 1.07.2025	EPS 550 and EPS 350	EPS 550
NEW GENERATION CAPACITY MECHANISMS launched after 4.07.2019	Obligations and agreements concluded by 1.07.2025	Without EPS for the duration of contracts and commitments up to 1.07.2025	EPS 550
	Obligations and agreements concluded since 1.07.2025	EPS 550 and EPS 350	EPS 550

Source: own elaboration.

European Commission acceptance process[19]

After preparing the European resource adequacy assessment (EERA) and the removal of identified market and regulatory distortions, the Member State shall draw up a plan with a timetable for the implementation of the measures. It shall submit it to the European Commission, which, within four months, shall give an opinion on whether the envisaged measures are sufficient and which may call for its amendment. The Member State shall monitor the implementation of the plan. It publishes the results in an annual report and forwards them to the Commission, which then gives its opinion as to whether the plan has been properly implemented and whether the problem has been resolved. If not, the State may initiate the notification process. Once accepted by the Commission, it may implement the designed mechanism.

The Regulation introduces a predictable plan for the process of accepting the support mechanism as permitted state aid in the absence of other possibilities to solve the problem. It defines a separate procedure for such mechanisms, which, despite the existence of sectoral aid guidelines for energy[20], has not been in place so far. If, in spite of the introduction of remedial measures, there is a problem of resource adequacy, the process of accepting a reserve or a capacity market as permitted state aid by the European Commission will probably be as faster than ever before. The Commission will now have a full overview of the situation, with relevant data and analysis, and dialogue with the Member State will be conducted. Member States cannot put in place mechanisms before the European Commission has given its opinion.

19 Articles 21, 23, 24 of Regulation 2019/943.

20 Guidelines on State aid for environmental protection and energy (EEAG) 2014-2020.

Consequences[21]

The provisions on support mechanisms apply from 1 January 2020. Exceptions are the provisions on CO_2 emission limits (EPS 550 and 350) and a part of the provisions on the preparation of the ERAA assessment methodology, which will be used from the date of entry into force of the Regulation, i.e. 4 July 2019. As regards emission limits, a derogation is provided for mechanisms operating prior to the entry into force of the Regulation. In this case, countries may organise auctions without emission limits until the end of 2019. Therefore, the most important consequences for the functioning of the Polish power market are as follows:

Obligation to review existing mechanisms

After 1 January 2020 Poland and all other countries applying capacity adequacy mechanisms are required to assess ERAA and possibly NRAA, as in the case of newly proposed mechanisms. If the existence of a capacity adequacy problem is not confirmed, no new contracts can be established. If it is confirmed, the State has to prepare a recovery plan with a timetable for the application of remedies, including the removal of market failures and regulatory distortions. Until the plan is approved by the European Commission, the signing of new agreements is suspended.

21 Regulation 2018/1999. Application: from 10.1.2019. (with exceptions - see Annex). Directive 2018/2001. Transposition: by 30.06.2021. Regulation 2019/943. Application: from 1.1.2020, with exceptions, inter alia, from 4.7.2019. - Articles 22(4), 23(3) and 23(6) (for other exceptions, see annex).

CO_2 emission limits

1. Until 31 December 2019, no CO_2 emission limits will be in force on the Polish capacity market. Auctions planned for the end of this year will be organised on the basis of the same principles as in the previous year. Obligations resulting from the previous auctions and those held until the end of 2019 will remain valid for the entire period for which the contracts are signed. In the case of Poland, if this year's auctions result in the signing of the longest-lasting agreements, i.e. 15 or 17-year agreements, they will be valid even until 2041. As a consequence of the auctions conducted so far, this category includes, among others, all the latest coal investments, i.e. new units in Kozienice, Jaworzno, Turów, Opole, which obtained supply contracts in the years 2021-2036, and Ostrołęka C - for the period 2023-2038.

2. From 1 January 2020 to 1 July 2025, generation capacities operating commercially before the entry into force of the Regulation, i.e. 4 July 2019, emitting more than 550 kg CO_2/kWh of electricity and more than 350 kg CO_2 per kWh of installed capacity on average per year, may be admitted to the capacity market. This applies not only to auctions, but also to commitments covering this period. The consequences of these provisions concern mainly units, which in the previous auctions received annual contracts and before 1 July 2025 will again participate in auctions.

3. From 1 July 2025, all entities whose contracts expire after that date and which do not meet the EPS limits of 550 and 350 will be excluded from the capacity market. That is to say, participation in auctions, signing contracts and receiving payments will be prohibited.

This means that on the Polish market, due to the CO_2 emission limit, there will exist both coal-fired units with long-lasting support within the capacity market and units without such a possibility. Selected capacities will receive support under even 15-year contracts, some under 5-year supply contracts. The remaining ones, under possibly renewed annual contracts, will receive several-year support, lasting no longer than until mid-2025.

Other capacities meeting the CO_2 emission criteria will be able to participate in the market without restrictions through the entire duration of this mechanism.

Table 2: Functioning of CO_2 emission limits within the Polish capacity market

		GENERATION UNITS (started commercial production before 4.07.2019)	NEW GENERATION UNITS (started commercial production after 4.07.2019)
CAPACITY MARKET IN POLAND (as a mechanism functioning on the date of entry into force of the Regulation, i.e. 4.07.2019)	Obligations and agreements concluded before 31.12.2019	Without EPS for the whole period of validity of the agreements	Without EPS for the whole period of validity of the agreements
	Obligations and agreements concluded from 1.01.2020 to 1.07.2025	Without EPS for the duration of contracts and commitments up to 1.07.2025	EPS 550 from 1.1.2020
	Obligations and agreements concluded since 1.07.2025	EPS 550 and EPS 350	EPS 550

Source: own elaboration

Strategic reserve as an alternative?

Introduction of an additional mechanism by Poland, for example as a strategic reserve, will require to go through the whole process of introducing new mechanisms. It will also be necessary to demonstrate that a functioning capacity market is not sufficient. It should be noted that, after 1 July 2025, coal-fired power plants could not participate in the reserve. With the current EU regulations, this means that it is very unlikely that a new mechanism will be established in Poland.

Table 3: Functioning of CO_2 emission limits in case of introduction of a new support mechanism, ex. strategic reserve in Poland.

		GENERATION UNITS (started commercial production before 4.07.2019)	NEW GENERATION UNITS (started commercial production after 4.07.2019)
POSSIBLE NEW GENERATION CAPACITY MECHANISM, EX. STRATEGIC RESERVE activated after 4.07.2019	Obligations and agreements concluded by 1.07.2025	Without EPS for the duration of contracts and commitments up to 1.07.2025	EPS 550
	Obligations and agreements concluded since 1.07.2025	EPS 550 and EPS 350	EPS 550

Source: own elaboration.

3.4. Cross-zonal trade

Building a single energy market will not be possible without connecting national markets and facilitating energy trading. The European Union has therefore set itself the following objective:

Increasing the cross-zonal trade capacity to a minimum 70%[22]

Member States shall annually increase increase the cross-zonal trade capacity. The objective shall be to reach a minimum level of 70% of such capacity by 31 December 2025 at the latest. The remaining 30% may be used, inter alia, for circular and internal flows at any critical network element. The increase is to be achieved on an equal annual basis over the period 2020-2025. Time-limited derogations are possible in exceptional cases where operational security needs to be maintained. Supervision of the implementation of this obligation is carried out by:

- Agency for the Cooperation of Energy Regulators (ACER),
- Regional Coordination Centres,
- national regulatory authorities, through ongoing assessments and reports of TSOs.

If countries do not fulfil this task, the configurations of the areas covering these countries may be changed. Market participants will be given access to the maximum level of interconnection capacity and transmission grids on market terms. Capacity shall also be freely tradable on the secondary market provided that the TSO is informed. With the exceptional circumstances relating to the need to maintain system security, the level of interconnection capacity may not be reduced in order to manage flows resulting from transactions concluded within market areas, or to remedy limitations within its own market areas.

22 Articles 15, 16 of Regulation 2019/943

More competitiveness

The planned liberalisation processes and cross-zonal trade increase should contribute to strengthened competition. The growing level of cross-border trade will pose a challenge to the Polish market players to participate in more competitive conditions than before. Due to the large differences in energy costs and prices for both individual and industrial consumers in Poland and neighbouring countries, it is expected that these processes will accelerate market reforms. In this context, the variable costs of fuel and mandatory purchase of CO_2 emission allowances will be a very important factor for the Polish market entities that generate energy primarily from coal. It is worth noting that by the end of 2025, Regional Coordination Centres will be responsible for achieving the objective of increasing the level of transmission capacity available for long-distance trade to at least 70%. Therefore, the type and level of involvement of the Polish transmission system operator in the establishment and operation of the new entity will be important.

3.5. Derogation from regulated tariffs

The introduction of market mechanisms means a move away from regulating prices for consumers. The package transfers the task of combating energy poverty to the shoulders of national social policy. These measures regulate:

Restrictions on the use of regulated prices for households and micro-enterprises[23]

Member States should protect vulnerable household customers suffering from energy poverty[24] mainly through social policies or measures other than public intervention for setting prices for electricity supply. They are free to define such customers and criteria of energy poverty. In exceptional cases, public intervention to regulate prices is allowed for:

23 Regulation 2018/1999. Application: from 10.01.2019. (with exceptions - see Annex). Directive 2018/2001. Transposition: by 30.06.2021. Regulation 2019/943. Applicability: from 1.1.2020, with exceptions, inter alia, from 4.7.2019. - Articles 22(4), 23(3) and 23(6) (for other exceptions, see annex).

24 The definition of vulnerable customers is set by the States; it may refer to energy poverty and, inter alia, to the prohibition of disconnection of such customers in critical situations. It can determine the level of income, the share of energy expenditure in income, energy efficiency in residential buildings, dependence on electrical appliances for health, age or other criteria - Article 28 of Directive 2019/944. Energy poverty - countries set criteria for assessing households affected by energy poverty, such as low incomes, high share of energy expenditure in disposable income and low energy efficiency - Article 29 of Directive 2019/944.

a) affected by energy poverty and vulnerable household customers, on condition that they are:

- limited in time,
- proportionate to their beneficiaries and
- clearly defined, transparent and non-discriminatory,
- guarantee access to the consumer on equal terms for all energy companies,
- include an indicative target for reducing energy poverty in the NECP, with a presentation of actions, including in social policy.

b) household and microenterprises that are not affected by energy poverty or vulnerable consumers under the above conditions, and in addition:

- these are accompanied by the introduction of competition on the market, i.e. retail prices set on the market, and methods to assess the progress of these activities;
- price should exceed the costs;
- regulation should not distort the operation of the wholesale market;
- beneficiaries will be able to choose between a range of market offers. To this end, they should receive appropriate information on a quarterly basis, as well as
- be able to install a smart meter without additional charges.

The conditions for the application of regulated prices[25]

The Member State shall notify the European Commission of the measures taken in accordance with the above principles and may apply them immediately. The notification shall contain:

- a description of the beneficiaries and the number of household customers concerned by the measure;
- duration of regulation;
- description of the method for determining the price;
- the reasons for the measures and their effect on competition.

The European Commission will monitor which countries are still applying regulated prices, as well as the degree of competition between suppliers. By the beginning of 2022 and 2025, it will receive appropriate reports from countries on this subject showing progress in the transition to market prices.

On that basis, it shall present a report by 31 December 2025, which may be accompanied by a legislative proposal setting an end date for the application of the regulated prices.

25 Articles 5, 28-29 of Directive 2019/944.

Consequences[26]

Need for price liberalisation

Since the beginning of 2021, Poland, which applies regulated prices to individual customers, will be obliged to release prices. It will be possible to maintain regulation only to a very limited extent and scale, certainly not in the same formula as before. Price liberalization is one of the conditions that the state should take into account before designing generation capacity mechanisms such as strategic reserves or capacity markets. Poland will therefore not be able to delay the liberalisation of prices. Several factors, including high prices of CO_2 emission allowances, affect the costs of the majority of producers in Poland. The consequence may be an increase in energy prices. On the other hand, effective competition between energy companies may slow down price increases. In addition, under the new regulations, high energy prices may be compensated mainly by social policy instruments.

These issues will certainly have a significant impact on the political sphere, which will also translate into pressure on state-controlled entities of the power market.

3.6. Regionalisation - stronger decision-making and cooperation in the market

Regionalisation is expected to accelerate the construction of a single energy market. Cross-border cooperation in specific regions will involve not only transmission but also distribution system operators. The challenge is to open up markets and increase energy trade between EU countries, as well as to cooperate in the case of energy crises. To this end they are to serve:

Establishment of Regional Coordination Centres[27]

Regional Coordination Centres will be established to complement regional cooperation of transmission system operators, including, inter alia, the implementation of at least 70% of the transmission capacity level available for cross-zonal trade.

The geographical scope of the Regional Coordination Centres will be determined by the Agency for the Cooperation of Energy Regulators on the basis of a proposal submitted by 5 January 2020 by the ENTSO-E. By 5 July 2020, all the TSOs from each region will submit to the relevant regulatory authorities an application for the establishment of Regional Coordination Centres and will determine, inter alia, their registered office, organisational and financial solutions, including the legal form, statute and internal regulations. Once approved by the regulatory authorities, the Regional Centres will replace the exisiting coordinators of regional security.

Regional Centres complement the work of transmission system operators by performing tasks of regional importance, mainly of analytical nature, e.g. determining transmission capacities for the needs of long-distance trade - key in the context of the objective of increasing the capacity of cross-border trade to at least 70% of available transmission capacities, security analysis, creation of common grid models.

Transmission system operators shall remain responsible for managing electricity flows and for ensuring a secure, reliable and efficient power system. Regional Coordination Centres may indicate the so-called coordinated actions (concerning

26 Regulation 2018/1999. Application: from 10.1.2019. (with exceptions - see Annex). Directive 2018/2001. Transposition: by 30.06.2021. Regulation 2019/943. Application: from 1.1.2020, with exceptions, inter alia, from 4.7.2019. - Articles 22(4), 23(3) and 23(6) (for other exceptions, see annex).

27 Articles 16, 35-37 and Annex I of Regulation 2019/943.

transmission capacity and security analysis) and make recommendations to TSO (in other areas). An operator may not implement a coordinated action only if it demonstrates that it would result in an breach of safety of the system. The recommendations are non-binding.

European coordinator of distribution system operators[28]

The development of RES is closely related to the development of distribution systems. In order to establish institutional cooperation in the EU, an organisation of EU Distribution System Operators (EU DSO) will be established.

By 5 July 2020, distribution system operators are to submit the draft statutes and rules of procedure as well as the list of members and the rules of financing (by registered members of the EU DSO) to the European Commission and the Agency for the Cooperation of Energy Regulators. After approval or possible revision by the Commission or the Agency, the operators establish the organisation of the EU DSO, with the internal organisation and decision making not dependent on them, but laid down in the Regulation on the internal market in electricity.

The table below presents the Management Board of the EU DSO entity and representation of the operators in the board. Given that in the EU, large operators are responsible for the distribution of up to around 80% of the EU population and medium and small operators for up to 20% in total, this means that there is a significant underrepresentation of the largest operators.

Table 4: Management Board of the EU DSO

PRESIDENT		
9 members representing large operators with more than 1 million customers	9 members representing medium sized operators with 100,000 -1 million customers	9 members representing small operators with less than 100,000 customers
responsible for the distribution of up to **80% of the EU population**	responsible for the distribution of up to approx. **20% of the EU population**	

The most important tasks of the EU DSO entity:

- promotion of the operation and planning of distribution networks in coordination with the operation and planning of transmission networks;
- integration of renewable energy sources and dispersed generation and storage of energy;
- facilitating flexibility and responsiveness of off-take and market access for network users;
- developing the digitisation of distribution systems, supporting data management;
- contributing to the development of network codes, including extensive consultation of all stakeholders on new codes, and working with the ENTSO-E within their area of responsibility.

Regional electricity crisis scenarios[29]

Connecting EU energy markets requires better coordination between power system operators in the event of a crisis. These include power generation or transmission failures, terrorist attacks, fuel crises and so on. National authorities are required to prepare action plans in cooperation with neighbouring country operators. ENTSO-E will develop regional crisis scenarios, indicating the most important risks for each region. Regional support in times of crisis will

28 Articles 53-55 of Regulation 2019/943.
29 Articles 5, 6, 10-12, 14, 15 of Regulation 2019/941.

involve agreed and accepted compensation conditions, which must be fair and cost-reflective. The obligation to inform the European Commission and neighbouring countries about the emergence of the crisis has been introduced.

Strengthened role of the Agency for the Cooperation of Energy Regulators[30]

The Agency has been in operation since 2011. It aims to promote market integration and harmonisation of regulatory frameworks and to complement and coordinate the work of national regulatory authorities at EU level. The Agency deals with both electricity and natural gas markets and has a key role in the development of network and market rules in the European Union. With the deepening of regional cooperation between new actors such as Regional Coordination Centres and EU DSO and the growing number of cross-border interconnections, the Agency has been given a strengthened role in the regulatory oversight of ENTSO-E, EU RCC and EU DSO.

Consequences[31]

Transmission system operators and the functioning of Regional Coordination Centres

The Regional Coordination Centres, despite trying to give them (at the stage of the negotiation of the internal electricity market regulation) broad and strong competences, will only play a coordinating role. National TSOs will remain responsible for managing energy flows and ensuring system security. However, Regional Coordination Centres have been assigned the role of supporting the achievement of the 70% minimum capacity target for cross-zonal trade. Probably ongoing future revisions of EU law will make them more important and they will have additional competencies. The impulse may be the assessment of the achievement of the above mentioned objective in the period 2020-2025. The details of the functioning of the Centres depend to a large extent on the arrangements between the transmission system operators. Therefore, it is important to involve the Polish operator in the preparatory works and then in the functioning of the Centre. Due to the extensive experience that European operators have in the cooperation in the EU, including ENTSO-E, it can be assumed that cooperation between Regional Centres it will continue to be effective.

Cooperation between distribution system operators

For the Polish distribution system operators who will begin cooperation in the new structure, i.e. the EU DSO, the challenge will be to gain experience in cross-border operations, building relationships with others operators, effective participation in EU decision-making processes shaping the conditions for the functioning of the distribution sector. It is especially important because with over 1 million customers, they will be underrepresented in the management board. This puts the interests of this group in a less favourable situation than those of medium and small distributors from other countries. At the same time, one of the main tasks of the EU DSO organisation will be to facilitate the integration of RES units (including small installations) from dispersed generation, which will become bigger competition for large fossil-fuel-fired power plants.

30 Regulation 2019/942.

31 Regulation 2019/943; Applicability: from 1.1.2020 with the exception of the following: (with exceptions - see annex), from 4.07.2019. - Articles 16, 35, 36 (and others - see annex). Regulation 2019/941; Application: from 4.07.2019. Regulation 2019/942; Application: from 4.07.2019.

3.7. Strengthened customer rights

One of the most important tasks of the Clean Energy Package is to strengthen the rights of customers in the electricity, heating and cooling markets. They have to be aware and active market participants, thanks to which competition and the quality of the services offered is increased. The most important changes:

Strengthening the rights of electricity consumers

- **Entitlement to a dynamic electricity price contract** [32]

Member States shall ensure that final customers, who have a so-called smart meter installed, can request at least one supplier and each supplier from more than 200 000 final customers to contract dynamic electricity prices. This regulation will be in place from the beginning of 2021 at the latest.

- **Right to switch and rules on switching-related fees** [33]

Consumers will be given the right to change supplier within three weeks (within 24 hours from 2026), without additional charges at least for households and small businesses.

- **Comparison tools**[34]

Member States are required to develop publicly available, legible and free online tools for comparing offers for electricity supply.

- **Using smart metering systems**[35]

Member States that join such schemes shall ensure that the costs to be borne by final customers are transparent and non-discriminatory, taking into account long-term benefits. The implementation of such schemes may be subject to a cost-benefit analysis. Where a negative rating is given, each final customer shall have the right, at his own cost, to install or modernize smart meter, where applicable.

The conditions offered should be reasonable and cost-effective. After a negative assessment of the introduction of metering systems, Member States shall re-examine the costs and benefits at least every four years or more frequently. Consumers eligible for public intervention to regulate electricity supply prices are entitled to install smart meters without additional charges and to receive proposals, information and assistance in this respect. These provisions apply to future installations and to installations replacing older smart meters. Systems already installed or started before 4 July 2019 may continue to be in use. However, systems that do not meet the functional requirements may not be in use after 5 July 2031.

32 Article 11 of Directive 2019/944.
33 Article 12 of Directive 2019/944.
34 Article 14 of Directive 2019/944.
35 Articles 5, 19, 21 of Directive 2019/944.

Rights of heating and cooling consumers

- **Heating and cooling metering, counter metering and cost allocation**[36]

Member States shall ensure that final customers for district heating and cooling are able to purchase meters at competitive prices. In multi-apartment and multi-functional buildings with own source of heating or cooling

or district heating, individual consumption meters for each building unit shall be installed where technically feasible and cost-effective, i.e. proportionate to the potential energy savings. Where this is not possible, individual heat cost allocators shall be used, unless a Member State demonstrates that it would not be cost-effective to install such allocators. Meters and allocators installed after 25 October 2020 shall be capable of remote reading.

- **Billing and consumption information**[37]

If heat cost metering or heat cost allocators are installed, all end-users should receive accurate and reliable information on billing and heat consumption. This applies to natural and legal persons purchasing energy for their own use or natural and legal persons occupying an individual building or module in a multifamily or multifunctional building.

- **Information on energy efficiency and RES share**[38]

Final customers receive the right to information on energy efficiency and the share of renewable energy in their energy mix in heating and cooling systems. This information should be easily accessible, e.g. on websites suppliers, on an annual basis, or on request.

- **Disconnection from the system**[39]

Customers of district heating and cooling systems, which are not efficient or which do not become efficient by 31 December 2025, on the basis of a plan approved by the competent authority, are granted the right to disconnect from such systems by terminating or amending the contract to produce their own heating or cooling from renewable sources.

36 Article 9a-c, Annex VIIa of Directive 2018/2002.
37 Article 10a of Directive 2018/2001.
38 Article 24 of Directive 2018/2001.
39 Article 24 of Directive 2018/2001.

Consequences[40]

Pro-environmental consumer behaviour

Strengthened rights and customer empowerment, together with progressive liberalisation in energy markets, should contribute to increased competition and, consequently, better quality of services offered. More informed electricity and heat consumers will be able to decide when and how much energy they consume. The growing willingness of customers to make rational market choices may, thanks to strengthened rights, also become a stimulus to the development of prosumers. This is particularly important in the context of the increasing costs of operation of entities which generate energy from fossil fuels and are therefore burdened with the need to purchase CO_2 emission allowances. In the near future, an increase in consumer awareness of environmental costs is to be expected. This is a trend which is clearly visible in most countries of Western Europe. It concerns the attitudes of customers and the behaviour of energy providers. Presenting the lowest possible environmental costs becomes one of the bases for building the image of companies on these markets. It seems that also in Poland this trend will be more and more common. Customers who will take into account not only the costs of electricity and heat, but also the fact whether the energy comes from renewable sources, will increase. Many of the companies will become prosumers or will strive to consume only green energy, also because of their reputation. The regulations, most of which will come into force in 2021, will make it possible to verify and publish widely the origin of energy.

3.8. Energy efficiency and implementation of the 2030 target

The Clean Energy Package is guided by the principle of ‚energy efficiency first'. It applies to the entire power supply chain - generation, transmission, distribution and final consumption. Benefits from the improvement of efficiency include reduction of greenhouse gas emissions, improvement of the EU energy security, air quality and health condition of the citizens, reduction of energy costs for consumers and increase of competitiveness. The following changes are to serve the purpose of implementing the EU's energy efficiency plans:

Energy efficiency target 32.5% and 0.8% of annual savings by 2030[41]

The level of the energy efficiency target has been raised to at least 32.5% with the possibility of a further increase in 2023 after prior assessment. The target remains EU-wide and indicative. In addition, Member States are required to provide total savings of final energy consumption corresponding to annual new energy consumption savings of at least 0.8% over the period 2021-2030. The 32.5% target will be implemented through Member States' contributions as specified in the national plans.

A primary energy factor (PEF) of 2,1[42]

The default PEF value for the electricity sector has been reduced from 2.5 to 2.1. Until 25 December 2022, the European Commission will review the PEF on the basis of data obtained from the national plans. Subsequent reviews will be carried out every four years.

40 Directive 2019/944; Transposition: by 31.12.2019. - Article 70(5)(a), by 25.10.2020. - Article 70 point 4, until 31.12.2020. - Articles 11-24 (and others - see annex). Directive 2018/2002; Transposition: by 25.06.2020 with the exception of: by 25.10.2020. - Article 1, points (5) to (10) and points (3) and (4) of the Annex. Directive 2018/2001; Transposition: by 30.06.2021.

41 Articles 1, 7 of Directive 2018/2002, Article 3 of Regulation 2018/1999.

42 Annex IV of Directive 2018/2002.

Mechanisms to ensure the achievement of the EU's energy efficiency target by 2030[43]

The architecture of the energy union governance system establishes mechanisms to ensure achievement the energy efficiency objective through national contributions from EU members. These mechanisms include:

- **Process for preparing, evaluating and updating national plans**. All plans in the preparation and updating phase are subject to the assessment of the European Commission. It examines in particular whether the planned contributions are sufficient to achieve the EU objectives, including energy efficiency goal. The Commission may issue recommendations on amendments to particular elements of the plans. Failure to do so obliges the state to provide a justification, which must be made public.

- **Trajectories to achieve the Union objective.** They are defined as indicative, cover the period 2021-2030, and will be agreed individually with each country that will determine its contribution as an absolute level of primary and final energy consumption over the period 2020 and 2030, together with an indicative trajectory showing this period.

- **Progress reports.** These are to be submitted every two years starting in 2023 and will include information on the implementation of the trajectory and targets and should refer to the recommendations of the European Commission. In addition, the European Parliament and the Council shall annually evaluate the implementation of the national plans on the basis of information from the European Commission.

- **National and European policies and measures.** These include: national support systems, administrative simplification, country-specific recommendations issued within the European semester, and the obligations arising from the Paris Agreement.

Consequences[44]

"Energy efficiency first"

The methods of achieving the EU's energy efficiency target indicate that, similarly as in the case of RES, it will be more monitored and met more effectively by all Member States than the existing target for 2020. Poland will probably achieve the target for 2020. It should be noted, however, that it is one of the few countries to have had the opportunity to increase energy consumption in relation to the base year 2005. In the perspective of 2030, it will be necessary to introduce mechanisms to reduce energy consumption according to the adopted trajectory from 2021 to 2030. One of the sectors that will need to increase its efforts is heating sector. As emphasised by the European Commission in the so-called European Semesters, Polish district heating in small and medium-sized towns still need significant investments due to the fact that most of them do not meet the energy efficiency criteria. The principle of ‚energy efficiency first' is a priority for the whole Package. A similar approach was reflected in the mechanisms of financial support for the energy transition by means of EU budget and European Investment Bank instruments. Hence the power and heating sector will receive greater support for investments related to energy efficiency.

43 Articles 4, 6, 8, 9, 13, 14, 17, 21, 29, 31, 32, 34, 36 of Regulation 2018/1999.

44 Directive 2018/2002; Transposition: by 25.06.2020 with the exception of: by 25.10.2020. - Article 1, points (5) to (10) and points (3) and (4) of the Annex. Regulation 2018/1999; Application: from 10.01.2019. (with exceptions - see Annex).

4. Summary

The energy union set up in 2015 represents a further step in the reform of the European energy and climate policy. Its implementation is to be ensured by the Clean Energy Package, which is the legal basis for the energy architecture. The package clearly defines the directions and methods of transition, putting renewable sources first. It places great emphasis on creating an energy sector that is open to regional cooperation and competition. The provisions of the package have been reflected in the EU's regional, economic and financial policies. It is also promoted by the new President of the European Commission Ursula von der Leyen in the idea of "Green Deal for Europe". In the upcoming term of office, the EU institutions will focus on the implementation of the package. The necessary reforms will be supported by funding from both the EU budget for 2021-2027 and the European Investment Bank. The Clean Energy Package is an unprecedented set of many changes, often of an evolutionary nature, but their number and coherence with other EU policies make it possible to expect major changes.

5. Annex

Deadlines for publication, entry into force, transposition or application of the relevant acts of the Clean Energy Package

Legislative acts	Publication in the Official Journal of the European Union	Entry into force	Transposition/application
Regulation 2018/1999 of 11.12.2018 on the governance of the Energy Union and climate action	21.12.2018	10.01.2019	10.01.2019 with the exception of: from 1.01.2021. Article 40, Article 53(2), (3) and (4), Article 54(3)(a), Article 54(4) and Article 55.
Directive 2018/2001 of 11.12.2018 on the promotion of the use of energy from renewable sources	21.12.2018	24.12.2018	until 30.06.2021
Directive 2018/2002 of 11.12.2018 on energy efficiency	21.12.2018	24.12.2018	until 25.06.2020 with the exception of: until 25.10.2020. - Article 1, points (5) to (10) and points (3) and (4) of the Annex
Regulation 2019/941 of 5 June 2019 on emergency preparedness in the electricity sector	14.06.2019	4.07.2019	from 4.07.2019
Regulation 2019/942 of 5 June 2019 establishing the European Union Agency for the Cooperation of Energy Regulators	14.06.2019	4.07.2019	from 4.07.2019
Regulation 2019/943 of 5.06.2019 on the following the internal energy market electricity	14.06.2019	4.07.2019	from 1.1.2020. except for: from 4.07.2019. Articles 14, 15, 22(4), Articles 23(3) and (6), 35, 36 and 62 and Articles 14(7) and 15 paragraph 2, Article 16.
Directive 2019/944 of 5.06.2019 on common market rules internal electricity	14.06.2019	4.07.2019	until 31.12.2019 Article 70 point 5 letter a) until 25.10.2020 Article 70 Article 2-5, Article 6(2) and (3), Article 7(1), Article 8(2)(j) and (l), Article 9(2), Article 10(2) to (12), Articles 11-24, Articles 26, 28 and 29, Article 8(2)(j) and (l), Article 9(2), Article 10(2) to (12), Article 11-24, Article 26, Article 28 and Article 29, Article 29. 31 to 34 and 36, Article 38(2), Articles 40 and 42, Article 46(2) (d), Articles 51 and 54, Articles 57 to 59, Articles 61 to 63, Article 70(1) to (3), point (5)(b) and (6), and Annexes I and II

Notes

Small steps to big changes.

Impact of the "Clean energy for all Europeans" package on power sector

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