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Conceptual Paper

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Legal and institutional aspects of public forms of electricity or gas fuel trading in Poland versus the conditions in the common energy market

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Abstract: This study aims at presenting the legally, technically, and economically empowered suggestion for a clear definition of a competitive market of gas fuels and electricity of a Member State in order to be utilized within trans-border trade of these utilities, as required by the European Union (EU) legislation. Thus, this study addresses, first of all, the issue of the division of the national gas fuel and electricity market into sections and separating these market segments that are more susceptible to the existence of competition in the trans-border dimension. This division is a model that reflects every internal market that is self-sufficient and distinguished in technical terms which has been established and is functioning within one or more Member States. The suggested structural, subject-related division of the market into sections, a competitive one (with its segments), a balancing one, and a technical one, makes it possible to determine which fragments of the market prevail over merely the technical security of ensuring continuity and quality of electricity supplies at the national level. Public forms of electricity and gas fuel trading take first place. Thus, second, the issues of legal and business conditions for operation in the energy section of the commodity exchange, regulated market, or open tenders for purchase of energy and interdependence between public forms of electricity or fuel gas trading and standards in the common electricity market have become the subject of this study. The advantage of a commodity exchange that establishes transparent conditions for public trading transactions involving these goods and provides pricing information for actors in the market cannot be overestimated. A commodity exchange enhances competition and is instrumental in the reduction of prices for ultimate clients. The completed analysis aims at reviewing public forms of trading as the instruments for achievement of the objectives of the national energy law and a component for a common energy market in the perspective of development of trans-border transmission capabilities. Legal multi-centricity and multi-aspectual nature of the addressed issues form a structure of relations that has affected the selection of the research methodology. Three research methods were adopted as the main principles that, bearing in mind a different context in which they are used, are treated to be complementary. The first one is an interdisciplinary research analysis, taking account of the context of functioning in the EU law environment in the interpretation of the national law provisions and technical sciences (and thus, e.g., laws of physics, properties of energy, technical aspects of functioning of the power industry as a system of interdependent relations of installations and grids) and economic sciences (e.g., a concept of the market, competition, operation of the commodity exchange). References to technical or economic sciences allowed to maintain the clarity of the above considerations and render the addressed issues better in practice. The legal and dogmatic method is an indispensable supplement of the above method; in this method, the process of interpretation of legal regulations is based on the jurisprudence and case law which should be

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referred, in particular, to the national law; it is made complete by the analysis of the economic practice. The selection of the concept analysis method (a linguistic one) as the third method should be justified by the undertaken attempts to define in a precise manner the content and the scope of meaning of general, generic concepts making references, as a rule, to a broad spectrum of business operations, the application of which in the EU legislation is a feature of this legal order established on the basis of the elements of the continental (established, statute) law and flexible *common law*.

Keywords: public economic law, commodity exchange, energy and fuel gas market

1 Underlying reasons for integrating of national energy markets in the European Union

The European Union (EU) is a business integration project aimed at transformation of a group of states built on a base of national factors into a union of states that are based on a uniform, internal, community market [Jurkowska and Skoczny, 2010, pp. XXVIII–128–130; Elżanowski et al., 2010, pp. XXVIII–128–130]. The electricity and gas fuels market accounts for an integral part of this market referred to jointly at the EU level as the energy market, which is based on two mechanisms of efficient competition, treaty freedoms of goods and services movement and harmonization of rules within member states. This market is expected to support the reinforcement of the economic and social unity of the EU, ensure its harmonious development for the benefit of entrepreneurs, and in a broader sense, for the benefit of all EU citizens whose well-being is the ultimate goal of the EU [Bernatt, 2010, pp. XXVIII–191, 197–199]. This well-being is particularly demonstrated in the area of care for affordability of electricity and a guarantee of public service [Szydło, 2005, p. 239]; the implementation of the above is to be supported by the right of free choice of a seller (a foundation of a uniform EU market) and Third Party Access (TPA) principle related to it [Directive 2009/72/EC, Article 32 and Art 33; Directive 2009/73/EC, Article 32 and Article 37]. The convergence of the national legislation enforced by the EU legislation enables undertaking business operations and occurrence of actual competition in any Member State of the EU at the level of the sellers' market (a lower-level market). The EU legislation guarantees the right of non-discriminating access of a seller in every Member State (the key infrastructure in the higher-level market) to transportation services provided by national operators of electricity and power or gas systems and the services related to completion of supplies to clients (e.g., to communication and IT systems).

The product containment and, as a follow-up, the price containment of national markets resulting from balancing the supply and demand for available gas fuels or electricity only within the transmission system or within systems of a single state only, is a disadvantage of the current market model. A unique nature of the gas market in Poland arises from over 60% dependence on supplies from international markets [the President of the Energy Regulatory Office, 2018]. It determines the focus of the state on the diversification and storing, which increases the liquidity and competition in the national market, which is favorable for the availability of the gas fuel and price affordability for an ultimate client. Member States developed a legal model for cooperation and solidarity for emergency situations, in case of threats to security of supplies in a Member State [Regulation 994/2010]. The domestic gas retail market supported by 90 trading companies (sellers) is dominated by the entities from the PGNiG S.A. capital group. The share of other sellers in the market is less than 30%, although their share has been gradually growing [the President of the Energy Regulatory Office, 2017, p. 57]. The national electricity market features autarky of the production of electricity, which is good from the perspective of opening to competition in the trans-border dimension; it also features competition between sellers. The national retail market is comprised of 272 trading companies (sellers), although five “well-established” (prior to unbundling) sellers are the most prevalent [the President of the Energy Regulatory Office, 2017, p. 31].

Increase in the trans-border trade level (pursuant to the mutuality principles) that so far could not make its presence in the market at a decisive degree mainly for technical reasons is a key to the establishment

of an integrated, internal European energy market. Insufficient trans-border connections (the so-called interconnectors) featuring the capacity that could have an impact on prices in the national market (a specific market seclusion). The high demand for transmission capacities (export-wise and import-wise) in transmission capacity auctions (annual, monthly, daily, and on the supply completion date) imposes a structural nature to these limitations (Polskie Sieci Elektroenergetyczne S.A. [*Polish Power and Electricity Networks*], 2017); Operator Gazociągów Przesyłowych [*Transmission Gaslines Operator*] GAZ-SYSTEM S.A., 2018; the President of the Energy Regulatory Office, 2018].

As the targets of the EU are gradually achieved (presented above and articulated in the so-called “third energy package”), technical problems will be eliminated. System operators have been imposed the obligation of creating network development plans, but not only in order to guarantee the system “sufficiency” and security of supplies at the national level but also to implement a trans-border electricity exchange – construction of interconnectors featuring a specified minimum capacity. Development plans at the EU level provide a basis for assessment of the suitability and profitability of trans-border investment by a domestic regulator. Implementation of these plans was left for coordination at the level of a mandatory Organization of European Operators – European Network of Transmission System Operators for Electricity (ENTSO-E) (ENTSO-E) [Regulation 714/2009, Article 4; Regulation 715/2009, Article 4]. Then, the Member States, through national regulators, may require the operator to implement the investment. Its costs are meant to be taken into account in the operator’s tariff calculation effective in settlements with system users, utilizing a new connection by appropriate implementation of the Directives [Directive 2009/72/EC, Article 22(7) and (8); Directive 2009/73/EC, Article 22(7) and (8)]. An option to be exempted from, *inter alia*, the unbundling principle, the TPA principle, and powers of the national regulator while keeping specific terms and conditions [Regulation 714/2009, Article 17; Regulation 715/2009, Article 30; Directive 2009/73/EC, Article 48, Article 49] is intended to increase the profitability of an investment or its attractiveness for external financing.

National regulatory authorities, the Agency for Cooperation of Energy Regulators (ACER), the European Commission make up the so-called “network of regulatory authorities” [Directive 2009/72/EC, Article 38; Directive 2009/73/EC, Article 42; Regulation 714/2009, Article 4, 6 and 7; Regulation 715/2009, Article 4, 6 and 7]. This network was vested the task of coordinating cooperation with ENTSO-E to have the network codes determined by this organization (operators). In case they fail to determine them, the network codes will be developed by ACER and established as binding by the European Commission. It may be assumed that implementation of the European energy market was based on regulation method consisting of two stages: the first one involved the coordination of cooperation with the industry organization (ENTSO-E) and agreeing the rules of access to the market (within the limits of self-regulation ability) and the second one involved the mandatory harmonization of law by the EU authority (a binding arrangement). Following that, the ENTSO-E will be in charge of implementation and reporting on monitoring and enforcement of the EU legislation.

The codes are meant to standardize (on a framework basis) any and all significant issues (technical and commercial) of access to the system (in every Member State) for the transmission of energy and gas fuel together with all actors in the market and are meant to have a binding impact on national practices pursuant to the national legislation and operation of the national regulator (e.g., the President of the National Regulatory Office). The network codes should, in particular, set forth clear (transparent, but non-discriminatory) rules for the allocation of transmission capacity, access to systems of the Member States, and system limitations management. They are intended to link public entities (a legislator and regulatory authorities are obligated to implement them with executive measures) and market entities; in particular, system operators. Integration of internal markets of Member States will be achieved by implementation of system codes by system operators into their national operation manuals [*instrukcje ruchu*] and introduction of the provisions to the access service agreement executed with market entities – system users.

Implementation of new forms of cooperation and regulation reveals the energy market model expected by the EU legislator, based on gradual transition from markets of a single state via the stage of regional markets to the European market. The EU legislator encourages the Member States to demonstrate the grass-root initiative in establishing regional markets, to appoint a joint regional system operator and regulator

[Directive 2009/72/EC, Article 6, Article 13, Article 17, Article 22, Article 35; Directive 2009/73/EC, Article 6, Article 7, Article 39; Regulation 714/2009, Article 1, Article 12; Regulation 715/2009, Article 1, Article 12]. The underlying concept of the market understood in this way is to increase the level of competition and care of the consumer's interest as well as achieving security of supplies at the EU level (i.e., at the supranational level). It should be analyzed which fragments of the national market need to become components of the market understood in this way, without prejudice to the internal security of a Member State.

2 Segments (forms) of the energy market open to the EU freedom of movement of goods and services

Treaty convergence (co-sharing) of the EU and Member States powers in the area of achieving security of supplies (to clients) is a source of controversy in the scope of the EU energy market as the market at the supra-national level. The treaty principles of the EU provide for the sovereignty of states in the area of energy security (the Treaty on the European Union, Article 26(1); the Treaty on the Functioning of the European Union, Article 2(2) and (3), Article 4(2i) and Article 194). The perceived legal situation requires undertaking a dogmatic (legal and scientific) division of a national market and separating out these segments of the market that are suitable for the existence of competition at the trans-border dimension. The second, opposite criterion for the division is maintaining the bases for technical security of market functioning as a means of ensuring the security and quality of energy supplies at the national level. Maintaining its own security is a core of each Member State exclusive competence. The attempts to divide the market into segments that have been undertaken so far [Szczygieł, 2001] are currently insufficient; they have been undertaken at the time when the market has been first established and did not take the above legal environment into account. Significant qualification features of a model division have been anchored in legal and economic functions and aspects of the activities of system users, who participate in the value chain (*in German Wertschöpfungskette*) [Ziekow, 2007, p. 255; Koenig et al., 2006, p. 25], and for business purposes of various types of civil law relations established by these entities. Therefore, a structural, subject-related division of the electricity and gas fuel market in Poland should be recommended, with the sections (elements) or segments that are shown below:

Energy and gas fuel market

- I. Competitive market** – segments (forms of a market):
 - a) Contractual (executed on an individual basis, including negotiated contracts)
 - b) Exchange and other public forms of trading
 - c) Fragments of a balancing market (e.g., an agreement pursuant to a balancing bid/offer) and a regulated market (in a secondary market) based on contractual and exchange market instruments, that is, executing bilateral sales transactions (the so-called “secondary market”).
- II. Balancing market** (technical) – an area of operation of power companies directed on the implementation of contractual or exchange markets agreements using the contractual market instruments and authoritarian orders of an operator/operators.
- III. Regulated market** – services oriented on maintaining a proper functioning of the system, reliability of its operation and keeping quality parameters of gas fuel or electricity by system services (e.g., operational stand-by power, maintenance of contingency/cold reserve, Demand Side Response) or via a power market (within the scope of the so-called power auctions); gas fuel storing services, and in the future, possibly, also electricity.

Determination of a possibly broad scope of a competitive market requires a proper determination of limits of a balancing market (technical) and a regulated market, and separating out within these frameworks such parts, in which there is no room for transactions relevant for a contractual market. A balancing market involves the actions of system operators oriented on completion of supplies consistent with the demand of the sellers' clients, that is, recipients, despite a lack of contracting the sufficient size supplies by sellers

(pursuant on commercial schemes). In the same way, it may involve elimination of (the planned and) ordered surplus relative to a real demand in a given time unit (e.g., at the specific time of a given day).

A balancing (technical) market is a part of the electricity system or gas system, in which wholesale trading of electricity or a gas fuel is held, and a given system operator balances current demand for a given utility (goods) with its supplies in this system. A system operator manages these system limitations and performs settlements with the entities participating in the balancing market (producers, storage operators, sellers, commercial operator or commercial and technical operators, e.g., entities responsible for commercial balancing). To put it more precisely, manuals of system operators reduce the above (broader) definition of a balancing market for the purpose of the manual documents (as a legal act) and reconstructed on the basis of liability relations to the mechanism of ongoing balancing of demand for electricity or gas fuel with an available one or generated in the system (more precise/narrow presentation) [Polskie Sieci Elektroenergetyczne S.A., IRIESP, pp. 22, 24–27, 50; Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A., IRIESP, pp. 4, 11, 105–106, 121 and following]. The law (pursuant to the legal act – Power Law Article 3(12b) and (23)) mandates that every system user must belong to the balancing market, and subordination to the system operator is the statutory instrument to achieve it. Implementation of subordination to the system operator is done pursuant to the access agreement (on provision of transmission services either via the entity, a party to such agreement, pursuant to the distribution service agreement) and being an integral part of the operator's manual (i.e., pursuant to contractual principle; legal act – Power Law, Article 9g(12); (Polskie Sieci Elektroenergetyczne S.A., IRIESP, pp. 66–89; Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A., IRIESP, pp. 105–106, 121 and subsequent), pursuant to the agreements for provision of the so-called (regulatory) system services (thus under the contract principle) and pursuant to (unilateral, authoritarian) operator's instructions. The electricity market demonstrates additional unique features. Thus, the balancing market functioning within it, similarly to a contractual market, but to this extent exclusive of the sale of electricity from renewable sources of energy or in the co-generation process, but opposite to the exchange market, it is an electricity and power market.

A concept of the regulated market should be related to submission of a system services agreement, in which a transmission system operator is always the party, to regulation in a form of the approved manual of this operator as a contractual model (within the legal meaning – Article 384 and subsequent of the Civil Code). The manual standardizes a major essence of this type of liability relations. The execution of the agreement with a transmission operator itself may be performed in market (i.e., competitive) conditions.

Actions of the system operators described in the balancing (technical) market and on the regulated market are statutory tasks of the operators implemented to ensure the secure operation of the system (electricity and power or gas) and ensuring the required technical parameters for electricity or gas fuel in case any technical limitations of capacity of these systems occur, performing settlements of non-balanced energy supplied or abstracted from the system, and managing system limitations (legal act – Power Law, Article 3(23a) and (23b), Article 9c(1) and (2)).

Based on the above comments, the competitive market should be defined as a segment of a contractual market and these fragments of the balancing market and the regulated market, in which the following premises of involvement in the sales transactions have been met. First, the subject of the service (set forth in the agreement) is only electricity or gas fuel (e.g., “purchased additionally” on the exchange to balance the system by its operator or to execute the agreement pursuant to the balancing bid). Second, participation in the transaction involves freedom of selection of a counterparty or development of the price. Third, the objective of the executed agreement is loosely related to the objectives of the balancing market or a regulated market or the agreement does not have a permanent nature (has been executed for a short period of time). Participation in the competitive market should, in principle, be based on a voluntary participation and autonomy of development of liability relations.

Separation of elements, and the segments of markets within them, is a presentation of a theoretical model, albeit based on experience, observation, and practical analysis. This model may be subject to changes following the change of the assumed qualifying assumptions. Legal institutions within the market and its segments intermingle, aiming directly at achievement of a major target for which the electricity and gas fuel market was established, that is, supplying clients with them. It should be indicated that, from

the perspective of the outlined goal of this market, the financial market (including the financial contracts and derivatives trading) is of supplementary significance and actually operates on the side of the main trend of the energy-related business of power companies that is, on the side of the electricity and gas fuel market and related services. It should also be added that there are no studies addressing the issues of a clear definition of a competitive market of gas fuels and electricity of a Member State to be utilized in trans-border trade of these utilities, as required by the EU legislation, in the European academic and business-related publications.

The contracts featuring the subject of electricity or gas fuel sales are executed in three segments (forms) of electricity market: contractual, exchange, and balancing – technical. Each of them demonstrates a sophisticated legal regulation and a unique nature of executed contracts. It should be noted that the contracts executed by the producer do not include solely the energy sales contracts but also contracts including other services, sometimes the services that are not visible for an ultimate client, especially for the client in a household. In general, it is rather clear that along the contractual market open to competition in a trans-border dimension (in terms of bilateral and multi-lateral contracts), public forms of energy trading give the best perspective for development of competition. The commodity market (energy) is the most representative in this area, due to the role, which the exchange institution plays in an economy based on the free market principles.

3 Function of the public forms of energy or gas fuel trading – the so-called “obligation to trade”

An obligation to perform public trading of electricity or gas fuel is a means of limiting the freedom of performing business operations and the freedom of power companies to compete – producers (suppliers at the beginning of the supply chain) in the electricity market and power companies involved in gas fuel trading (i.e., suppliers of this fuel to clients) with other entities of law. Limitation of suppliers’ freedom to choose the manner in which they operate involves de-limitation of their options to choose participation in a given market, a part of this market, or de-limitation of the level (size) of such participation (please, see below).

The core of the freedom of competition is to allow unrelated entrepreneurs to compete to achieve the same business target, which concentrates on attracting potential clients and getting an advantage over the competitor in terms of attracting clients, by demonstrating advantages of its own business and offering (e.g., prices and terms and conditions of supply) or disadvantages of the competitor (ruling of the Supreme Court of 20 May 1991 r., II CR 445/90; Szwaja and Kubiak-Cyrul, 2016, pp. 7–8; Gronowski, 2009, pp. 28–29; Dabbah, 2004, p. 2). Competition between power suppliers is a desirable state in a market economy and supports the interest of a final client [Bishop and Walker, 2002, p. 11], provided it is performed in line with the principles of fair competition and good practice (*legal act – Law of Entrepreneurs*, Article 9) does not constitute an act of unfair competition, or an abuse of a superior position. In general, competition should take account of standardized needs of a sector, interests of market actors, and the requirements of organizing entities [e.g., Towarowa Giełda Energii S.A. (*Energy Commodity Exchange*)] or supervisors of the competition process (e.g., the President of the Energy Regulatory Office, the President of the Office of Competition and Consumer Protection, the Polish Financial Supervision Authority).

In an institutional sense, public forms of energy trading should include (as a separated set of legal standards regulating the area of a manner of performing and settling commercial transactions): a commodity exchange, a regulated market, and open tender (for purchase of electricity and in the future, possibly, also gas fuel) (legal act – Power Law, Article 49a and Article 49b). The commodity exchange is understood to be a group of persons, devices, and technical means ensuring identical terms and conditions for execution of exchange transactions and an identical access to market information at the same time, in particular about exchange rates and prices of exchange commodities and exchange commodity trading (Commodity Exchange Act, Article 2(1)). The objective of a company (joint-stock company) administering an exchange is concentration of supply and demand for exchange commodities, ensuring safe and efficient

course of exchange transactions and financial settlements, and the dissemination of uniform information enabling assessment of an ongoing value of exchange commodities (Commodity Exchange Act, Article 4). An exchange is an organized and a formalized component of a market, in which the parties to the business transaction interact with each other, and in which concentration of supply and demand for a commodity which is the subject of trading occurs, to determine selling or purchase rates. The exchange guarantees to the parties identical sales and purchase terms, fair access to market information, as well as safe and efficient financial settlement transaction [Jakubowski, 2007, pp. 184–185; Katner, 2011, pp. 74–76]. These features of the exchange, in particular, transparency of the transactions, undoubtedly equalize the market actors regardless of their nationality (i.e., a registered office) relative to the territory of each Member State.

A regulated market is a multi-party system for executing transactions, operating on a permanent basis, whereas the subject of these transactions covers financial instruments marketable in this system, ensuring investors common and equal access to market information at the same time while coupling bids and sales proposals of financial instruments and identical terms and conditions for the purchase and sale of these instruments, organized and subject to the supervision of a relevant authority pursuant to the principles set forth in the provisions of the law (statute) as well as recognized by a member state as meeting these terms and conditions and indicated to the European Commission as a regulated market (Article 14(1) of the Law on financial instruments trading). Electricity and gas fuel are commodities as well as underlying instruments for a financial instrument (a derivative) of a given commodity (e.g., an option or a future contract) (Law on financial instruments trading, Article 2(1)(2d) and (e)); Law on commodity exchanges, Article 2(2b), (19) and (20)). A purchase-sale transaction is performed pursuant to the agreement with a commodity exchange and agreements initiated via the exchange or an entity organizing a regulated market (which, in practical terms, is also a commodity exchange) and electricity or gas fuel sales or purchase “orders” submitted by the exchange transaction actors or in the regulated market.

Currently, transactions executed in the exchange market or in the regulated market are subject to a legal regime and the jurisdiction of a Member State in which an exchange or the regulated market system operates. It is not an obstacle for a trans-border transmission of a given utility, that is, execution of trans-border trading between the users of a national system with the users of systems of other states (in particular, the Member States). It requires, however, at least two conditions be met. First, having a valid transmission agreement by the sales agreement parties with operators of the neighboring transmission systems. Second, having a transmission capacity (in a technical sense) guaranteed by law (e.g., based on an auction won/winning bid) for a trans-border transportation of electricity or gas fuel with the operators of a given system. Undoubtedly, simplification of the system and consolidation of the two-stage mode of performing the executed agreement described above would ensure integration of the markets, the markets coupling. The market coupling involves establishment of a trans-border mechanism for coupling national markets by transmission system operators and an entity managing the commodity exchange based on a common algorithm for determining prices and transmission capacities made available to the actors in the combined markets on the connections with other electricity and power or gas systems (Law on commodity exchanges, Article 2(18)). Then, the transaction executed as part of the joining or rather coupling of the market would immediately (in a legal sense) have ensured access to trans-border transmission capacities between operators of coupled markets. Membership in one commodity exchange (national or from another member state) that had coupled markets with another exchange (i.e., located in another Member State) would be sufficient to execute the transaction by each party to the agreement.

The most popular place for coupling bids with sales proposals (for commodities) in the performance of the public obligation to sell in the exchange market and in the regulated market is the Towarowa Giełda Energii S.A. [*Energy Commodity Exchange, Joint-Stock Company*] with its registered office in Warsaw, hereinafter referred to as “TGE,” has been in operation since 2003 as authorized by the decision (permission) of the Securities and Exchange Commission (now the Polish Financial Supervision Authority). The subject of operation of the TGE is the organization of commodities trading (e.g., electricity and gas fuel), ensuring opportunities to its members to execute transactions (exchange transactions pursuant to the principles and in the cases provided for in the internal legal acts of the TGE, held in the commodity exchange as well as outside of it), their efficient and secure performance and execution of financial settlements of the exchange

transactions (that may be outsourced) (TGE Rules, Article 10(1)). Within only 5 years, the electricity trading in all markets managed by the TGE more than doubled from slightly more than 81 TWh in 2010 to almost 187 TWh in 2015. With the annual energy consumption of approximately 140 TWh in 2010, over 58% of the national consumption volume was traded on TGE. Five years later, this trade fluctuated at the level of 126% of the national production volume. A record-high electricity trading volume in 2015 at the level of 186.8 TWh accounted for over 128% of the national consumption [TGE, 2015, p. 19]. The total volume of transactions executed in 2017 in all electricity markets in TGE was 111.7 TWh which means a decrease in 11.8% compared to 2016 when the total volume of transactions was 126.7 TWh. When calculated at the supply date, sale of electricity with supply in 2017 amounted to 110.0 TWh which accounted for 66.3% of the gross electricity production in 2017 [the President of the Energy Regulatory Office, 2018]. Trading of natural gas in the TGE increased many times since the establishment of the market in late 2012. The trading volume of natural gas in 2014 was at the level of 1116 TWh which accounted for over 64% of natural gas consumption in Poland. In 2015, it was 106.9 TWh which accounted for 60% of the national consumption [TGE, 2015, p. 27]. The significance of the exchange continues to grow; in 2017, as a result of the contracts executed in the TGE S.A., as much as 123.7 TWh was supplied [the President of the Energy Regulatory Office, 2018].

As a rule, financial settlement of a transaction in the exchange or a regulated market is performed by a commodities brokerage house or a brokerage house that is a member of the exchange or by a commodities brokerage house or a brokerage house being a member of the exchange clearing house, which pursuant to a separate agreement with a client (an entity entitled to execution of transactions – a party to the sales agreement) will guarantee that an entity executing the transaction will meet all liabilities under the executed exchange transactions or transactions executed in the trans-border trading. Individual settlement of transactions is possible only in case of the entities holding the permission of the Polish Financial Supervision Authority for handling accounts or registers for specified commodities, which they trade (Law on commodities exchanges, Article 50(1) and (2)). Transactions may also be executed by legal persons, as clients entitled to changing sellers within the meaning of the legal act – Power Law. The membership of the exchange is restricted, as a rule, solely for professional trade participants (Law on commodities exchanges, Article 9(3)).

A consent to the terms and conditions of contracting, that is, the rules for executing specific transactions pursuant to submitted orders is expressed (for the future) as a result of the membership. These terms and conditions refer, in particular, to the following: technical parameters of standardized exchange commodities – electricity or gas fuel, that is, standardized trading units, a minimum supply period (at least 1 hour on the supply date), a procedure for coupling the sellers' and client's orders (including, *inter alia*, a choice of performance terms and conditions, a validity deadline of effectively submitted order, and marked price) and pricing (a transaction rate in the quoting system: a uniform rate, continuous trading, OTC deals or at the transaction price in the auction system). A basic nominal value unit is 1 MWh of electricity set forth with the accuracy of up to 0.1 MWh, but a partial transaction may cover at least 0.1 MWh, and a minimum supply unit (execution deadline understood as the period of physical supply) is at least 1 hour on the supply date (Towarowa Giełda Energii S.A., 2018, Article 22 and Article 23. Detailed principles of trading and settling for electricity on a Current Date Market; Towarowa Giełda Energii S.A., 2018, Article 34(3), Article 31, Article 41 of Detailed Trading and Settling Principles for Electricity on a Next Day Market). In the gas fuel (gas) market, in turn, a basic nominal value of one instrument is the volume of gas (MWh) expressed as a product of 1 MW and a number of hours on the performance date, at a given time (hour) of a supply date or in a given supply period (TGE S.A., 2017, Detailed Trading and Settling Principles for Gas on a Next Day and Current Date Market of Gas).

Regulation of public trading of electricity was a national initiative; it primarily covered the electricity and power sector (since 2010), and was then expanded to the gas sector. The intended objective of the regulation has been achieved; it increased the clarity and transparency of the market, trading liquidity, triggered the national price competition in the energy market (i.e., the commodity market) and facilitated the acquisition of realistic pricing information by actors or observers of this market. Bringing energy sales to the market or enhancing the terms and conditions for its competition could not involve vesting its public, open trading to a single entity, the commodities exchange, that is, establishing the monopoly on the

occasion of combatting domination of some power companies in the market. It would lead to the creation of a new area of natural monopoly. Thus, the legislator enacted the existence of a parallel option of trading in the regulated market [Targański, 2010, pp. 24–25], and in case of electricity, also in the form of a tender.

A public form of electricity sales by producers (suppliers) of electricity is an open electricity sales (unlimited) tender organized by a power company (or an entrepreneur contracted by this company). The institution of the tender is intended to enable, under the equality principle, an option of executing agreements for a greater number of participants and to increase by several times the transparency surrounding the electricity trading [Muras and Elżanowski, 2010, p. 1298]. The legislation, mainly the legal act – Power Law, Article 49a (10–12) and the Regulation of the Minister of Economy of 17 September 2010 on determining the manner and mode of organizing a tender on sales of electricity on the Internet trading platform [*rozporządzenia Ministra Gospodarki z 17.9.2010 r. w sprawie określenia sposobu and trybu organizowania and przeprowadzania przetargu na sprzedaż energii elektrycznej oraz sposobu and trybu sprzedaży energii elektrycznej na internetowej platformie handlowej*], and the Civil Code, Articles 70¹–70⁵ in the case of unregulated issues provide a legal basis for performing a tender. The only quantitative limitation – binding for the parties executing a sales agreements – was restricted to a tender executed in an oral form, in which the electricity in a volumes of 200,000 MWh may be sold on a one-off basis, with a total of less than 1,000,000 MWh (i.e., 1 TWh) in a given year (the aforementioned Regulation, Article 18).

4 The scope of obligation of public forms of energy or gas fuel trading

The electricity producers have been covered by the subject-related scope of the obligation to sell electricity in the commodity exchange or in the regulated market to the extent of 30% or more of the volume generated by a given energy producer in a given year. The producers who are provided with assistance (compensation) for termination of long-term agreements for supply of energy and power are obligated to offer all produced energy by means of public sales forms, including the mode of an open, public tender (legal act – Power Law, Article 49a(1) and (2)).

De lege lata subject-related exemptions from the referenced obligation include the following: (1) Supplying energy via a direct line to an ultimate client (i.e., operation out of the National Electric and Power System – KSE), (2) generation of energy in renewable energy sources (RES) (and confirmed to this effect by the certificate of origin) and in the co-generation process (of defined parameters, not necessarily qualifying as high-performance one), (3) consumed to satisfy internal needs of a producer (that will not be released to the market), (4) designed for performance of the operator's tasks (in the technical market), (5) generated in an establishment of the total installed power of less than 50 MW (with minor power of impact on the market and exempted from a concession/license obligation; legal act – Power Law, Article 32(1)(1b)). These manifestations of the production business are, in general, exempted from an obligation of public sale if they either feature a low impact on the competitive market or a state strongly interferes with it in any other manner or supports specific business (e.g., producers of energy from the RSE or co-generation). Producers of energy sold to meet the liabilities of long-term agreements executed with financial institutions to implement the investments involving production of this energy or the energy sold to the transmission system operator to enable such operator to meet its statutory tasks (KSE stability) may be optionally exempted from the relevant obligation. Lack of disruption of the competition environment in the energy market represents a premise of positive outcome of the request (a premise featuring a high level of discretion) or lack of disruption in the balancing market (a premise that requires reference to technical issues; legal act – Power Law, Article 49a(6)).

An obligation of public trading of gas fuel by power companies, in a commodities exchange or in a regulated market, covers 55% or more of high-methane natural gas fed in a given year to a transmission system: (1) on the inlets to the national transmission system from other states, (2) by the system of mine gas lines, and (3) by terminals of mine gas lines. The following gas is exempted from this obligation: (1) the gas representing obligatory reserves, (2) discharged from the national transmission system to the systems of other states, but in the volume of gas equal to the volume fed to the system in this year, (3) sold to operators

to enable them to perform their statutory tasks and (4) consumed to satisfy own needs of the supplier (legal act – Power Law, Article 49b(1) and (2)).

Failure to perform an exchange obligation to sell is subject to sanctions by the President of the Energy Regulatory Office, Article 56(1)(32). In the event, the tender is found not to comply with the provisions of the Regulation of the Minister of Economy of 17 September 2010, the President of the Energy Regulatory Office may cancel the tender (with the *ex tunc* effect, i.e., retrospectively), (legal act – Power Law, Article 49a(11)) (ruling of the Supreme Court of 13 September 2001, IV CKN 381/00).

5 Final remarks

If the question is which forms of energy trading should be related to the trans-border energy transmission, one should opt for public forms of trading, the energy exchange market, and the regulated market and, to a limited extent as the case has been so far, for public procurement. Public forms of sale protect the market against domination, against price conspiracy, unfair competition, and an excessive price for clients. Transparency of price information, directly after a commercial transaction makes it possible to perform a quick analysis and counteraction by regulatory authorities. It becomes a challenge to equip law enforcement authorities, supervision over energy trading authorities with powerful legal instruments to discipline the parties of trans-border commercial transactions and to have an option to cancel agreements and impose administrative sanctions including exclusion of an entity from trading or ordering performance of solely public trading as well as application of financial penalties.

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