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Polish Biomethane  
Organization

# Analysis of selected issues related to the trading of biomethane in Poland

Warsaw, 2024



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# Introduction



Dear Biomethane Enthusiasts,

Below please find analysis of the Polish Biomethane Organization showing what are legal requirements related to the biomethane trade in Poland and from Poland. We decided to provide the following main topics: Legal requirements for the sale of biomethane from biomethane plants in Poland to customers in Poland, selected potential biomethane transport models with a consideration of a biomethane trading company and finally, how to legally connect a biomethane plant to Polish gas grids.

I hope this will be useful for all who now considers biomethane investments in Poland.

With kindest regards,

Michal Tarka, Director General in Polish Biomethane Organization

A handwritten signature in black ink, appearing to read 'Michal Tarka'. The signature is fluid and cursive.

# 1

## Legal requirements for the sale of biomethane from biomethane plants in Poland to customers in Poland

### 1.1 Legal definitions

In order to discuss the specific issues of biomethane, it is necessary to discuss the conceptual network for this topic.

Under Polish law, biomethane is a gas obtained from biogas, agricultural biogas or renewable hydrogen, subjected to a purification process, fed into a gas network or transported in compressed or liquefied form by means of transport other than gas networks, or used for fuelling motor vehicles without being transported (Article 2 point 3c of the RES act).

Biogas, on the other hand, is gas derived from biomass, in particular from animal or vegetable waste processing facilities, sewage treatment plants and landfill sites (Article 2 point 1 of the RES act).

The legal definition of biomass is that it is the biodegradable fraction of products, waste or residues of biological origin from agriculture, including plant and animal matter, forestry and related industries including fisheries and aquaculture, processed biomass, in particular in the form of briquettes, pellets, torrefaction and biocarbon, as well as the biodegradable fraction of industrial or municipal waste of plant or animal origin, including waste from waste treatment installations and waste from water and wastewater treatment, in particular sewage sludge, in accordance with waste legislation on the eligibility of the energy fraction recovered from the thermal treatment of waste (Article 2 point 3 of the RES act).

Agricultural biogas, on the other hand, was defined by the legislator as gas obtained by methane fermentation of:

- agricultural products and agricultural by-products, including animal faeces,
- products from the processing of products of agricultural origin and by-products, waste or residues from such processing, including food processing and production, from industrial plants, as well as from on-site wastewater treatment plants from agri-food processing, where separation of industrial wastewater from other types of sludge and wastewater is carried out,
- out-of-date or unfit for consumption food products, (d) fats and oil mixtures from oil/water separation containing only edible oils and fats, (e) vegetable biomass collected from land other than that recorded as agricultural, (f) animal faeces from non-agricultural activity - excluding biogas from municipal waste, landfills, as well as substrates from wastewater treatment plants other than those mentioned in letter b (Article 2 point 2 of the RES act).  
According to the aforementioned legal definition of biomethane,

it can also be obtained from biohydrogen, which in turn has been defined as hydrogen produced from renewable energy sources in a renewable energy source installation, with the production of renewable hydrogen also being understood as the production of renewable hydrogen by electrolysis (Article 2 point 36a of the RES act).

Another relevant definition in view of the subject matter of this memorandum is the legal definition of a renewable energy source installation, which defines it as an installation constituting a distinct set of: (a) equipment for the production of electricity or heat or cooling as described by technical and commercial data, in which electricity or heat or cooling is produced from renewable energy sources, or (b) buildings and equipment constituting a technical and functional unit for the production of biogas, agricultural biogas, biomethane or renewable hydrogen - as well as an electricity storage facility, biogas storage facility or storage installation connected to that unit within the meaning of Article 3 point 10a of the energy law used for the storage of agricultural biogas, biomethane or renewable hydrogen (Article 2 point 13 of the RES act).

## 1.2 Rules for conducting economic activity within the scope of biogas or biomethane

Two prerequisites are required for the commencement of a regulated activity in the form of economic activity within the scope of biogas or biomethane involving the production of biogas for the purpose of generating biomethane or the production of biomethane from biogas (hereinafter referred to as: "biogas or biomethane business"). It is necessary to fulfil the specific conditions described in the provisions of the RES act and to obtain an entry in the register of biogas or biomethane producers (hereinafter referred to as: the "register of biogas producers").

The operation of a biogas and biomethane business does not require a concession, permit, licence or approval.

The register of biogas producers is maintained by the President of the Energy Regulatory Office (hereinafter referred to as: the "President of the ERO"). The entry is made at the request of the generator (Article 8 of the RES act). The required elements of an application are set out in Article 10 of the RES act.

An entrepreneur who intends to start a biogas or biomethane business is required to fulfil the following conditions:

**1)** have documents proving legal title to:

- the building facilities where the biogas or biomethane business will be conducted,
- the renewable energy source installation for the production of biogas for the purpose of generating biomethane or the production of biomethane from biogas;

**2)** have at its disposal appropriate facilities and installations, including technical equipment, which meet the requirements set out in particular in the fire protection regulations, in the sanitary regulations and in the environmental regulations, enabling the proper performance of the biogas or biomethane business. An entity that has obtained an entry in the register of biogas producers shall comply with these conditions for the entire duration of its biogas or biomethane business.

According to the aforementioned legal definition of biomethane, it can also be obtained from biohydrogen, which in turn has been defined as hydrogen produced from renewable energy sources in a renewable energy source installation, with the production of renewable hydrogen also being understood as the production of renewable hydrogen by electrolysis (Article 2 point 36a of the RES act).

Another relevant definition in view of the subject matter of this memorandum is the legal definition of a renewable energy source installation, which defines it as an installation constituting a distinct set of:

- equipment for the production of electricity or heat or cooling as described by technical and commercial data, in which electricity or heat or cooling is produced from renewable energy sources,
- buildings and equipment constituting a technical and functional unit for the production of biogas, agricultural biogas, biomethane or renewable hydrogen - as well as an electricity storage facility, biogas storage facility or storage installation connected to that unit within the meaning of Article 3 point 10a of the energy law used for the storage of agricultural biogas, biomethane or renewable hydrogen (Article 2 point 13 of the RES act).

In addition, a generator who has been registered in the register in question for the entire duration of its biogas or biomethane business has been obliged by the legislator to comply with the following conditions:

**1)** not to use fossil fuels or fuels derived from their processing or biomass, biogas or bioliquids contaminated with substances that are not biomass, biogas or bioliquids that increase their calorific value - as raw materials for the production of biogas for the purpose of generating biomethane or for the production of biomethane from biogas;

**2)** keep records of:

- the quantities of biogas produced for the production of biomethane, detailing the quantities of: - biomethane produced from biogas, - biogas sold for the production of biomethane, - biogas used in other ways,
- quantities of biomethane produced from biogas, detailing the quantities of biomethane: - injected into a gas network, - transported in compressed or liquefied form by means of transport other than gas networks, - used to refuel motor vehicles without being transported, - sold in order to be used for the fulfilment of the obligation referred to in Article 23 clause 1 of the act on bio-components and liquid biofuels, together with an indication of the share of the raw materials listed in appendix no. 1 in part A to that act used for its production,
- the quantity of raw materials used for the production of biogas for the purpose of generating biomethane and for the production of biomethane from biogas and the type of these raw materials;

**3)** have documentation confirming, depending on the type of activity performed, the date on which biogas was first produced for the purpose of generating biomethane or on which biomethane from biogas was first produced at the given renewable energy source installation, or the date on which they were first produced after the completion of the modernisation of that installation and the date on which the modernisation of that installation was completed;

4) submit to the President of the ERO the reports of the biogas or biomethane producer containing the information referred to in point 2;

5) submit to the President of the ERO the information referred to in point 3 within 30 days from the date of the first production of biogas for the purpose of generation of biomethane or the first production of biomethane from biogas, or their first production after the completion of the modernisation of the renewable energy source installation and the date on which the modernisation of the installation was completed (Article 9 clause 1a of the RES act).

The refusal of the registration in the register of biogas producers is made by a decision issued by the President of the ERO. A decision to refuse registration in the register of biogas producers is issued when:

- ➔ a final ruling has been issued banning the generator from performing economic activity in the scope of biogas production for the purpose of biomethane generation or the production of biomethane from biogas;
- ➔ within the period of 3 years preceding the date of submission of an application for an entry to the register of biogas producers the generator was deleted from the given register for the reasons referred to – respectively - in Article 14 clause 1 or 1a of the RES act;
- ➔ the entity applying for an entry to the register of biogas producers does not fulfil the conditions referred to – respectively - in Article 9 clause 1a point 1 and 2 of the RES act.

## 1.3 Rules for conducting economic activity within the scope of biogas or biomethane

For the commencement of a regulated activity in the form of economic activity in the area of the production of agricultural biogas in renewable energy source installations other than an agricultural biogas micro-installation, as well as for the economic activity in the area of production of biomethane from agricultural biogas (hereinafter referred to as: the “agricultural biogas business”), the fulfilment of two prerequisites is required. It is necessary to fulfil the specific conditions set out in the provisions of the RES provisions and to obtain an entry in the register of producers performing economic activity within the scope of agricultural biogas (hereinafter referred to as: “register of agricultural biogas producers”) (Article 23 point 3 of the RES act).

The agricultural biogas business does not require a concession, permit, licence or approval. The register of agricultural biogas producers is kept by the Director General of the National Centre for Agricultural Support - KOWR (hereinafter referred to as: “Director General of KOWR”). The entry is made at the request of a producer performing economic activity in the area of agricultural biogas (Article 24 clause 1 and 2 of the RES act).

An entrepreneur who intends to start a biogas or biomethane business is required to fulfil the following conditions:

- have a document confirming the legal title to the buildings in which the agricultural biogas business will be conducted;

- have at their disposal appropriate facilities and installations, including technical equipment, meeting the requirements set out in particular in fire protection regulations, sanitary regulations and environmental protection regulations, enabling the performance of this economic activity, as well as documents confirming the fulfilment of this obligation.

An entity that has obtained an entry in the register of agricultural biogas producers must comply with these conditions for the entire duration of the agricultural biogas business. In addition, a generator who has been registered in the register in question for the entire duration of its agricultural biogas business has been obliged by the legislator to comply with the following conditions:

- use for the production of agricultural biogas only the substrates mentioned in Article 2 point 2 of the RES act;
- use only agricultural biogas for the production of biomethane from agricultural biogas;

**3) keep records concerning respectively:**

- the quantity and type of all substrates used for the production of agricultural biogas, with the exception that in the case of the use of waste from on-site wastewater treatment plants from agri-food processing, where a separation of industrial wastewater from other types of sludge and wastewater is carried out, these records shall indicate the code of the waste together with an additional designation that confirms, in accordance with the provisions issued pursuant to Article 4 clause 3 of the act of 14 December 2012 on waste, that this waste comes exclusively from the processing of products from agriculture, horticulture, hydroponics, fishing, forestry or hunting,
- the amount of agricultural biogas produced, specifying the amount of agricultural biogas: used to produce electricity, used to produce biomethane, sold, used otherwise,
- the amount of electricity produced from agricultural biogas, specifying the amount of electricity: sold to the seller - referred to in Article 40 clause 1 of the RES act, or to another consumer, used for the production of agricultural biogas, used in another manner,
- the amount of biomethane produced from agricultural biogas, specifying the amount of biomethane: injected into the gas network, transported in compressed or liquefied form by means of transport other than gas networks, used for fuelling motor vehicles without the need to transport it, sold in order to use it for the fulfilment of the obligation referred to in Article 23 clause 1 of the act on bio-components and liquid biofuels, together with an indication of the share of the raw materials listed in appendix no. 1 in part A to that act used to produce it,
- the quantity of by-product generated as a result of the production of agricultural biogas,
- the quantity of agricultural biogas purchased and the details of the entity from whom the agricultural biogas was purchased;
- have documentation confirming the date on which electricity was first generated from agricultural biogas, or on which agricultural biogas was first generated, or on which biomethane was first generated from agricultural biogas in a given renewable energy source installation, or the date on which they were first generated after the completion of the modernisation of that installation and the date on which the modernisation of that installation was completed;
- submit quarterly reports containing the information referred to in point 3 to the Director General of KOWR within 45 days of the end of the quarter; the quarterly reports may be submitted by means of the ICT system administered by the Director General of KOWR.



The refusal of the registration in the register of agricultural biogas producers is made by a decision issued by the Director General of KOWR. A decision to refuse registration in the register of agricultural biogas producers is issued when:

- a final ruling prohibiting the producer from performing an agricultural biogas business has been issued;
- within 3 years preceding the submission of an application for an entry to the register of agricultural biogas producers, the producer was deleted from that register for reasons referred to in Article 30 clause 1 of the RES act;
- the renewable energy source installation which is to serve the producer to perform an agricultural biogas business may not serve to perform such an economic activity again pursuant to Article 31 clause 4 of the RES act.

Importantly, in the case of biomethane producers who generate this gaseous fuel from both biogas and agricultural biogas, it is the legislator who introduces the principle that registration in one of the above-mentioned registers is mandatory. Also included in the category of biogas or biomethane business is the production of biomethane from a mixture of biogas and agricultural biogas. In this case, only registration in the register of biogas producers is required. In addition, it should be pointed out that an entry in the register of biogas producers is not required for the production of agricultural biogas for the purpose of generating biomethane or for the production of biomethane from agricultural biogas. In this case, only an entry in the register of agricultural biogas producers is required (Article 7 of the RES act).

The production of biogas for biomethane or the production of biomethane from biogas without an entry in the register of biogas producers, or contrary to the content of this entry, as well as the production of agricultural biogas or biomethane from agricultural biogas in a renewable energy source installation without an entry in the register of agricultural biogas producers, or contrary to the content of this entry, is subject to a financial penalty imposed by the President of the ERO or the Director General of KOWR, respectively (Article 168 point 14a and 20 of the RES act). In addition, carrying out economic activity without the required entry in the regulated activity register constitutes an offence and is punishable by a limitation of liberty or a fine (Article 601 § 1 of the act of 20 May 1971 - Code of Petty Offences) (Journal of Laws of 2023, item 2119, as amended).

## 1.4 Trading of biomethane, including trading of biomethane with foreign entities

First of all, it should be pointed out that under the Polish legal system, there are no legal obstacles to the business of producing and selling biomethane being carried out within a single entity.

The legislator chose to include biomethane in the legal definition of gaseous fuels (Article 3 point 3a of the energy law). Consequently, pursuant to the wording of Article 32 clause 4 of the energy law, it is in principle necessary to obtain a concession to trade in gaseous fuels (OPG) before commencing the business of trading in biomethane.

The OPG entity which obtained a concession is entitled to trade biomethane with foreign entities. The legislator, in contrast to foreign natural gas trading, does not specify the obligation to obtain an additional concession in this respect. Before starting the business of selling biomethane from a biomethane plant in Poland to customers in other EU member states, the legislation of the EU member state concerned on biomethane, including in particular its quality standards, should be analysed in detail.

The granting of concessions is the competence of the President of the ERO. An application for a concession (or a promise of a concession) to trade in gaseous fuels should be submitted to the local branch of the ERO according to the applicant's registered office. The applicant must meet the prerequisites for a concession as set out in Article 33 clause 1 of the energy law. An application for an OPG concession should include information and attachments that prove that the applicant meets the conditions of its granting. The legislator, in Article 35 clause 1 of the energy law, indicates an open catalogue of information and appendices that should be included in an application for a concession (or a promise of concession). A concession is granted for a fixed period of not less than 10 years and not more than 50 years, unless the entrepreneur applies for a shorter period (Article 36 of the energy law). The granting of a concession may be made conditional on the applicant submitting an asset security for the purpose of satisfying third-party claims which may arise as a result of improper performance of the economic activity covered by the concession, including environmental damage, the amount of which is set at a level not lower than 1/12 of the highest, planned by the applicant for the next 3 calendar years, annual revenues from the economic activity for which the concession is to be granted (Article 38 clause 1 and 2 of the energy law).

An energy company which has been granted a concession is obliged to pay an annual concession fee to the state budget, calculated on the basis of the amount of revenues obtained from the sale of goods within the scope of activity covered by the concession in the year in which the obligation to pay the fee arose and on the basis of the coefficients set out in the regulations issued pursuant to Article 34 clause 6 of the energy law. The President of the ERO refuses to grant a concession when the applicant does not fulfil the conditions required by the regulations (Article 35 clause 5 of the energy law).

Conducting economic activity of trading in gaseous fuels without the required concession constitutes a criminal offence and is punishable by a fine of up to PLN 5,000,000 or penalty of the deprivation of liberty for a period of six months to five years (Article 57g clause 1 of the energy law).

# 2

## Selected potential biomethane transport models with a consideration of a biomethane trading company

### 2.1. Supply of biomethane through a direct gas pipeline

The norms contained in Article 7a clause 3 - 4 of the energy law regulate the rules concerning the construction of direct gas pipelines. A direct gas pipeline is a gas pipeline that has been constructed for the purpose of directly supplying gaseous fuels to the customer's installation bypassing the gas system (Article 3 clause 11e of the energy law). In the light of the aforementioned legal definition of a direct gas pipeline and legal definitions of such concepts as transmission of gaseous fuels (Article 3 point 4 letter a of the energy law) and distribution of gaseous fuels (cf. Article 3 point 5 letter a of the energy law), transporting gaseous fuel by means of a direct gas pipeline does not constitute transmission or distribution of that fuel. Therefore, a transmission concession or a distribution concession for gaseous fuels is not required for such activity. Consequently, there is also no legal obstacle to the business of producing, trading and transporting biomethane by direct gas pipeline within a single entity.

The use of a direct gas pipeline institution can be an interesting solution especially for large industrial plants that need significant volumes of natural gas to function properly, which can be replaced by biomethane. These plants can secure the long-term supply of biomethane at a more favourable price by securing the supply of this gaseous fuel from a dedicated generation source. Biomethane production based on this model minimises the costs associated with charges related to the use of the transmission or distribution network. The proposed model for securing the supply of biomethane from a dedicated source may also allow for a reduction in costs associated with the need to purchase carbon dioxide emission allowances.

Direct gas pipelines are not part of the transmission or distribution network. Direct gas pipelines are an exception to the unwritten principle of network priority (using existing and available gas networks first). This exception is justified by the need to supply gas where network infrastructure cannot be built or adequately developed for technical or economic reasons, or where the customer concerned is refused access to the network. Undeniably, therefore, the direct gas pipeline instrument allows for a more flexible gas network system and access, being complementary (or substitutive) to the network and constituting the fundamental regulatory right of third-party access to the network (TPA). This authorisation to build direct gas pipelines is not absolute. The legislator has chosen to limit the freedom to build direct gas pipelines by introducing the need for the regulator to carry out a prior examination of the facts prevailing in the gas supply market in each case in order to justify the measure in question (cf. E. Kosiński, Commentary to Article 7a, in: M. Czarnecka, T. Ogłódek (ed.), *Prawo energetyczne. Efektywność energetyczna*. Volume I. Commentary, 2023, pp. 287-288). Significantly, in the context of trading biomethane with foreign entities, the doctrine points out that there are no regulations in the Polish legal order that would indicate the impossibility of running such gas pipelines across national borders.

Consequently, it should be considered permissible for such gas pipelines to cross the territory of two or more EU or EEA Member States, provided that, in those States too, such a gas pipeline is not qualified as a distribution or transmission network (cf. M. Grzywacz, M. Kraśniewski, B. Pikiewicz, M. Ziarkowski, Commentary to Article 3, in: M. Czarnecka, T. Ogłódek (ed.), *Prawo energetyczne. Efektywność energetyczna*. Volume I. Commentary, 2023, p. 43).

In accordance with Article 7a clause 3 of the energy law, the construction of a direct gas pipeline requires, prior to the issuance of a construction permit, the consent of the President of the ERO issued by way of an administrative decision. Pursuant to the wording of Article 7a clause 4 of the energy law, the decision of the President of the ERO issued in this respect has a preliminary character in relation to the decision of the architectural and construction administration body, which means that the relevant decision on the permit for the construction of a direct gas pipeline cannot be effectively issued until a positive decision is issued by the President of the ERO (cf. M. Nowaczek-Zaręba, Z. Muras Commentary to Article 7a, in: M. Swora, Z. Muras (eds.), *Prawo energetyczne*, 2016, p. 907; M. Czarnecka, T. Ogłódek, Commentary to Article 7a, in: M. Czarnecka, T. Ogłódek, *Prawo energetyczne*, 2012, Legalis).

Proceedings with respect to the issue by the President of the ERO of the consent for the construction of a direct pipeline are conducted on the basis of the administrative procedure regulated by the Code of Administrative Procedure (Article 30 of the energy law). In this regard, it should be pointed out that an application for consent for the construction of a direct pipeline may be submitted by the investor, who is obliged to obtain the permits, arrangements or opinions of other authorities concerning this infrastructure required by special regulations, but also by any other entity that has a legal interest in the operation of the line (Article 28 of the Code of Administrative Procedure). In this respect, it may in particular be the customer intending to use the direct supply of biomethane, the producer of that biomethane, as well as the entrepreneur intending to operate the direct gas pipeline in question.

In accordance with Article 7a clause 4 point 1 and 2 of the energy law, the President of the ERO, when granting consent for the construction of a direct gas pipeline, shall take into account the use of the capacity of the existing gas network. Another criterion to be taken into account by the President of the ERO is the refusal to provide gas transmission or distribution services with the use of the existing gas network to the entity requesting the consent and the non-acceptance of a complaint lodged against such a refusal. The President of the ERO has a certain amount of discretionary power falling within the scope of regulatory discretion, characteristic of independent regulators in specific infrastructure sectors. The first of the above-mentioned prerequisites for the President of the ERO to grant consent for the construction of a direct gas pipeline means that it is necessary to examine whether the network exists at all in a given location, and then to examine whether the existing infrastructure provides sufficient capacity on the distribution or transmission network to ensure gas supply in the volume and quality desired by the customer. In turn, in the case of the second criterion, the President of the ERO should examine whether there was a dispute concerning the refusal of access to the network and whether the procedure for the provision of fuel transmission or distribution services has been exhausted in accordance with Article 8 clause 1 of the energy law. Clearly, a *minor ad maius*, the criterion in question may also be related to a possible refusal to connect to the network, which subsequently conditions the technical feasibility of providing transmission or distribution services. An analysis of the criteria indicated in Article 7a clause 4 point 1 and 2 of the energy law makes it possible to conclude that they are independent of each other and, consequently, the consent referred to in clause 3 may be based on each of these criteria separately or on all of them.

It is also rightly pointed out in the literature that the President of the ERO, in exercising its regulatory discretion when granting consent for the construction of a direct gas pipeline, is also obliged to take into account the general objectives of the energy law as indicated in Article 1 clause 2 of the energy law (inter alia, ensuring energy security, economical and rational use of fuels and energy, development of competition, counteracting the negative effects of natural monopolies and balancing the interests of energy enterprises as well as fuel and energy consumers), as well as weigh the interests of entities interested in the construction of this infrastructure (M. Czarnecka, T. Ogłódek, Commentary to Article 7a, in: M. Czarnecka, T. Ogłódek, Prawo energetyczne, 2012, Legalis).

Consequently, given all the above-mentioned considerations, if the business customer in question is already connected to the gas network and, consequently, its energy needs are met within the functioning gas system, the President of the ERO, as a rule, will not issue an appropriate decision authorising the supply of this customer through a direct gas pipeline being alternative to the gas network.

Therefore, when analysing the available models for the supply of biomethane from RES installations to business end-users, one should also consider a model whose premise is to design the network infrastructure in such a way that it is not covered by the concept of a direct gas pipeline, the operation of which is subject to the obligation to obtain the appropriate approval from the President of the ERO.

According to the literal wording of the definition of a direct gas pipeline, a gas pipeline can be classified as direct when the gaseous fuel will be supplied to only one customer. If more customers are connected, the gas pipeline loses its status as a direct gas pipeline and transforms into a gas network covered by a distribution concession.

We will also not be dealing with a direct gas pipeline in the event that a biomethane generation facility is handed over into dependent possession to a business end-user of the biomethane produced therein. Indeed, the mere possession of a given generating unit (e.g. a biomethane generation facility) can be of an owner-like or dependent nature. A dependent possessor is a person who has actual possession of another's property, e.g. a tenant, lessee, user, but the ownership right itself continues to vest in the owner (owner-like possessor). Thus, possession presents itself as a factual state of specific authority over a thing. Once the installation is put into dependent possession, the installation in a civil law sense no longer belongs to the company generating biomethane, but it belongs to the dependent possessor. In this case, therefore, we are dealing with the self-consumption of the biomethane generated by the dependent possessor of the generation unit in question. Furthermore, if the entire amount of biomethane produced is self-consumed - the surplus is not traded and therefore no economic activity is conducted in this respect within the meaning of Article 3 of the act of 6 March 2018 - Entrepreneurship Law (Journal of Laws of 2021, item 162, consolidated act, as amended). Consequently, an entry in the relevant register is not required in this case, as both the provision of Article 7 clause 1 point 2 of the RES act and the provision of Article 23 point 1 and 3 of the RES act refer to biogas and agricultural biogas activities in the context of conducting economic activity. According to the wording of the aforementioned provision of the entrepreneurship law, economic activity is an organised gainful activity, conducted on its own behalf and in a continuous manner. According to the wording of the aforementioned provision of the entrepreneurship law, economic activity is an organised gainful activity, conducted on its own behalf and in a continuous manner. According to the view of the doctrine, gainful activity should satisfy someone else's needs in the market, regardless of whether it is to satisfy someone else's material or immaterial needs.

Thus, such activity can be described as “for sale” activities. Accordingly, gainful activity is not the satisfaction of one's own needs, i.e. consumption activity. The view presented is also supported by case law, where it is indicated that only external activities with the aim of, for example, providing services to third parties, constitute the economic activity. In contrast, activity conducted for one's own needs is not an economic activity (cf. A. K. Kruszewski, *Prawo przedsiębiorców*. Commentary, ed. A. Pietrzak, Warsaw 2019, Article 3).

The proposed business model requires the biomethane generation unit to be located at or near the site of the dependent possessor. In addition to controlling the cost of physical biomethane, the use of biomethane for self-consumption prior to the metering and billing system will also bring tangible benefits in terms of reducing the service charge for the distribution of this gaseous fuel. In this case, the settlement between the investor and the business end-user will consist of the payment by the end-user to the investor of rent or lease fee or remuneration for use, possibly also remuneration for the provision of maintenance/monitoring services for the biomethane plant.

## 2.2. Supply of biomethane within the gas distribution network

### 2.2.1. Supply of biomethane through a nationwide gas distribution or transmission network

Biomethane can be supplied to a business end-user or a trading company within a nationwide gas distribution or transmission network. Both the generating unit and the business end-user can be connected to either the distribution or transmission network. The connection procedure is described in point III of this memorandum. The seller is obliged to conclude a contract for the provision of gaseous fuel transmission or distribution services with the TSOg or DSOg to whose network the customer is connected (Article 5 clause 1b of the energy law). The contract for the provision of distribution or transmission services should be with the relevant energy company performing the tasks of a gas distribution system operator (hereinafter referred to as: “DSOg”) or the gas transmission system operator (hereinafter referred to as: “TSOg”). By decision of the President of the ERO, the TSOg in Poland is the Operator Gazociągów Przesyłowych GAZ-SYSTEM S.A. with its registered office in Warsaw.

The supply of gaseous fuels takes place, after prior connection to the network, on the basis of a sales contract and a contract for the provision of transmission or distribution services or a sales contract, a contract for the provision of transmission or distribution services and a contract for the provision of gaseous fuel storage services or a contract for the provision of gas liquefaction services (Article 5 clause 1 of the energy law). Biomethane may also be sold on the basis of the so-called comprehensive agreement referred to in Article 5 clause 3 of the energy law, the essence of which boils down to the fact that it contains provisions of a sales agreement and a contract for the provision of transmission or distribution services, whereby the distribution or transmission service is actually provided by the DSOg or TSOg respectively on the basis of an order for the provision of this service by the trading company (i.e. in the model under discussion - by the seller of biomethane). The TSOg and the DSOg, within their respective areas of operation, under the terms and conditions resulting from the concluded contract for the provision of transmission or distribution services, provide the service of transmission or distribution of biomethane meeting the quality parameters for gaseous fuels introduced into the network as set out in the provisions issued pursuant to [Article 9 clause 1](#) and [2](#) of the energy

law, produced in a renewable energy source installation connected to the network of a given operator (Article 118 of the RES act).

The quality parameters and the rules for testing quality parameters for biomethane are contained in the ordinance of the Minister of Climate and Environment of 6 August 2022 amending the ordinance on detailed conditions for the operation of the gas system (Journal of Laws, item 1899). On the basis of Article 118 of the RES act, only the failure of a biomethane generator to meet the quality standards referred to above may constitute grounds for the TSOg or DSOg with which a contract for the provision of transmission or distribution services has been concluded to refuse to off take biomethane in the area of operation of the distribution or transmission energy company concerned. Pursuant to Article 168 clause 7 of the RES act, an entity that fails to comply with the obligation to provide transmission or distribution services referred to above is subject to a financial penalty imposed by the President of the ERO. In addition, pursuant to Article 56 point 24 of the energy law, the President of the ERO imposes a fine on an energy company which is an operator designated under Article 9h of the energy law and which fails to fulfil its obligations as an operator under the act.

It should be emphasised that this obligation to provide transmission or distribution services should be clearly distinguished from the obligation of the DSOg and TSOg to purchase biomethane. These entities offtake biomethane from the connected RES installation for transport through distribution or transmission networks respectively. According to both EU and national regulations, there is an unbundling of transmission and distribution activity from generation and trading activity (Article 9d of the energy law). Consequently, a generator of biomethane injected into the gas network should find a market player interested in purchasing this gas.

### 2.2.2. Supply of biomethane through local gas distribution networks

Both the generating unit and the business end-consumer can be connected to the distribution network or alternatively connect to a local network built solely for the purpose of supplying gaseous fuel within a limited territorial scope.

Leaving aside the technical as well as investment and construction issues related to the construction of the distribution network, it should be pointed out that the technical infrastructure built in this way requires the implementation of additional public law obligations under the energy law in order to be operated legally. First of all, however, according to Article 32 clause 1 point 3 of the energy law, such activities require a concession for the economic activity of fuel distribution, with the exception of: distribution of gaseous fuels in a network with a capacity of less than 1 MJ/s. An energy company that has been granted a concession is also obliged to pay an annual concession fee to the state budget, calculated on the basis of the amount of revenues generated from the sale of services within the scope of activity covered by the concession. In this context, however, it must be borne in mind that such an investment will involve the construction of a relatively short section of a dedicated local distribution network that will supply biomethane to a limited number of business end-users, which in turn determines the level of cost of running such a business adapted to the scale of the project.

At the same time, it should be noted that the adoption of this model also imposes an obligation on the investor (owner of the gas network) to appoint a gas distribution system operator. On a newly constructed section of the gas distribution network, the President of the ERO, at the request of the owner of the network (in the civil law sense), shall designate by decision and for a specified period, the entity performing the tasks of the distribution system operator on a given

section of the network, as well as specifies the section of that network or installation on which the economic activity with a concession will be performed. The entity appointed to act as the DSO may be:

- 1)** the owner of a given section of the gas network itself, who holds an appropriate concession to carry out distribution activity (its own concession);
- 2)** another energy company holding the concession required in this respect, with which the owner of the distribution network has concluded a contract entrusting that company with the performance of operator's duties using the network or installations owned by it (cf. Article 9h clause 3 of the energy law).

The relevant operator services agreement should specify in particular:

- 1)** the area in which the designated distribution system operator will carry out its economic activity;
- 2)** the rules for the performance of the operator's duties indicated in Article 9c clause 1b of the energy law, specifying the duties to be entrusted for performance directly by that operator (Article 9h clause 5 of the energy law). Accordingly, the DSO's duties can either be carried out directly by the network owner or can be entrusted to an external company as part of a paid contract (outsourced network operator management).

Cooperation in this respect with a partner with the appropriate competence in the distribution sector will, on the one hand, make it possible to limit distribution costs to the necessary minimum and, on the other hand, allow the business end-consumer in question to be directly connected to a dedicated local distribution network enabling its operating costs to be controlled by the owner of this infrastructure. Therefore, the investor - either alone or in a joint venture - as the owner of the distribution network, could be appointed by the President of the ERO as the DSO or, under an appropriate agreement, appoint another entity to perform this function.

The gas distribution system operator is a gas distribution energy company responsible for the network traffic in the gas distribution system, the day-to-day and long-term operational security of the system, the operation, maintenance, repair and necessary development of the distribution network, including interconnections with other gas systems. The basic tasks of the include, in particular:

- 1)** obligation to maintain the network in an appropriate condition (Article 4 clause 1 of the energy law);
- 2)** obligation to connect, including the issuance of the connection conditions (Article 7 of the energy law);
- 3)** obligation to fulfil the technical conditions for the supply of gaseous fuels stipulated in the provisions of the system ordinances, separate regulations and concessions (Article 7 clause 4 of the energy law);
- 4)** conducting network operations in the distribution network in an effective manner and maintaining the required reliability of the supply of gaseous fuels and their quality;
- 5)** the obligation to develop network operation and maintenance manuals;
- 6)** balancing the system of the gaseous distribution, excluding the conduct of settlements resulting from the imbalance of gaseous fuels supplied to and taken from the gas system; and managing system limitations in the distribution system, and in particular, the annual establishment of tariffs for the distribution of gaseous fuels within the framework of relevant proceedings before the President of the ERO (Article 45 of the energy law).



In terms of the extremely broad spectrum of DSO's responsibilities, it will not always be cost-effective to fulfil these responsibilities alone - particularly in relation to individual projects - and there is value in using the services of entities with appropriate organisational and technical facilities and *know-how*, particularly in the first years of operation of a project. Indeed, it should be borne in mind that a possible operator services agreement is concluded for a limited period of time and the owner of the network infrastructure can then conduct this activity independently.

If the model of transporting biomethane to the end-user using an "own" DSO is used, it must be borne in mind that the principle of so-called *unbundling*, i.e. ownership *unbundling*, will apply in this respect.

Consequently, a separate entity will need to be established to carry out the business of distributing gaseous fuels. According to both the EU and national regulations, there is an unbundling of transmission and distribution activity from generation and trading activity (Article 9d of the energy law). Pursuant to the provisions of Directive 2003/54/EC and Directive 2003/55/EC, the achievement of unbundling of the activities of the DSO as part of the structure of the vertically integrated enterprise from other activities not relating to the transmission, distribution or storage of gaseous fuels or the liquefaction of natural gas, consists in the legal unbundling of the DSO from other non-distribution activities, the functional unbundling of the DSO from other activities to ensure their independence within the vertically integrated undertaking, the accounting unbundling, i.e. the requirement to keep separate accounts for the activities of the DSO and other activities.

An interesting solution is the possibility of obtaining a closed distribution system statute (hereafter referred to as: "CDS") in relation to the relevant section of the distribution network. Pursuant to Article 9da clause 1 of the energy law, the President of the ERO, at the request of a distribution system operator, declares, by way of a decision, that a distribution system in a geographically limited area of an industrial plant, a commercial facility or a place for the provision of common services to which no more than 100 household customers for gaseous fuels or electricity are connected to the network, is a CDS, if with respect to the entire scope of its activity regarding the distribution of electricity or gaseous fuels:

- 1)** for specific technical or safety reasons, the operation or generation processes of the users of that system are integrated,
- 2)** 50% of the volume of electricity or gaseous fuels distributed annually is consumed by the owner or operator of the distribution system or undertakings related to that owner or operator.

In this decision, the President of the ERO defines the area of the CDS. As a rule, the decision is issued for a limited period of time, not exceeding 10 years. In the event that the concession for the economic activity regarding distribution of gaseous fuels or the decision on the designation of the operator concerning the distribution system operator, has been issued for a shorter period - the decision on the recognition of a given system as a CDS shall be issued for a period no longer than the duration of such decision (Article 9da clause 2 and 3 of the energy law). Obtaining the status of a CDS is associated with certain simplifications in relation to the public law obligations carried out by the DSOg in question. The indicated exemption includes the abandonment of the obligation to draw up development plans referred to in Article 16 of the energy law, as well as the annual submission of distribution tariffs for approval. The DSOg is exempted from the tariff obligation on condition that the payment for the gaseous fuels delivered to each of the end customers who are users of the CDS, calculated on the basis of the tariff rates for distribution services calculated by that operator, will not be higher than the

payment calculated on the basis of the fee rates resulting from the tariff rates approved by the President of the Energy Regulatory Office of the energy company to whose network it is connected or, in the absence of such connection, in whose area of operation the CDS is located, and the principles of settlement and the conditions of application of this tariff are the same as in the tariff of that energy company (Article 9de clause 2 of the energy law). The above represents a significant relief of local DSO serving a limited number of customers, including in particular business customers from very detailed and time-consuming distribution tariff rates approval proceedings.

However, it should be pointed out that the President of the ERO revokes ex officio the decision establishing a closed distribution system if the system in question has ceased to meet at least one of the conditions indicated above or has failed to make changes to enable these conditions to be met, despite a request, and if it does not apply the rules for determining the costs of electricity distribution in a closed distribution system (Article 9db clause 1 of the energy law).

After that, it is already possible to move on to an analysis of possible synergies to justify the construction of a distribution network between the generation unit and the business end-user. The main advantage is that there is no need for consistency between the construction site of the RES installation producing biomethane and the site where the biomethane is taken off by the business end-user. In other words, there are no spatial or locational restrictions on the possibility of building a given RES installation in the immediate vicinity of a business end-user - the installation can be unlimitedly distant from the place of consumption of the gaseous fuel, but its supply will be linked to the payment of the full distribution costs of the gaseous fuel.

The second value relates to the benefits of optimising the trading of the produced biomethane and the possibility of combining its sale with the use of an operational RES support scheme. It should be pointed out that, in accordance with the Polish legal system, the RES support scheme may be extended to biomethane producers in a renewable energy source installation with a total installed capacity of the renewable energy source installation used to produce biomethane, converted to electrical capacity of no more than 1 MW, who sell biomethane injected into the gas network to selected customers (Article 83l clause 1 of the RES act). The operational support scheme for the above-mentioned category of biomethane boils down to the right to cover the negative balance referred to in Article 93 clause 2 point 3 of the RES act. In practice, this means covering the difference between the market price of gaseous fuel and the price that enables generators to cover the costs of producing biogas (biomethane).

It is a condition for entry into the operational biomethane support scheme that a certificate of the ability to sell produced biomethane fed into the gas network is obtained in accordance with the provisions of clause 1, Articles 83l and 83n to 83s of the RES act and within the period referred to in Article 83p. The authority competent to issue such a certificate is the President of the ERO (Article 83m clause 8 of the RES act).

In order to obtain a certificate, a biomethane generator meeting the criteria referred to above should submit to the President of the ERO a declaration of its intention to sell the biomethane injected into the gas network at a fixed biomethane purchase price determined in accordance with Article 83n. The prerequisites and procedure for issuing a certificate of the ability to sell produced biomethane fed into the gas network are set out in Article 83m of the RES act. The period of support under this scheme is 20 years from the first day of sale of the supported biomethane, but no longer than 30 June 2048.

A business end-user and a biomethane generator can contract freely for the sale of biomethane bypassing an external trading company. Apart from the obvious environmental value of the end-user entering into a contract for the sale of biomethane directly with the generator (ESG regulations), this type of contract provides the end-user with predictability in the cost of biomethane (the physical price of biomethane, without distribution). In this way, the costs associated with the operation of energy companies trading in gaseous fuel are reduced and, as a result, room is created for more favourable contractual terms for the sale of biomethane.

An important element of a biomethane sales contract between a business end-user and a biomethane generator should reflect the cost of investment in a RES installation and the rate of return on that investment acceptable to the parties for the generator concerned. Entering into such a contract for an extended period of time will ensure, on the one hand, revenue stability for the generator and, on the other hand, stability in the cost of biomethane for the end-user.

A risk that should be diversified by the parties to the contract in question is to ensure a technical continuity of biomethane supply (commercial balancing) that will continuously balance the demand of the business end-user (e.g. a production plant). Biomethane and biogas are among the controllable and stable RES, but the projected end-user demand for gaseous fuel may fluctuate due to, among other things, temperature fluctuations when used for heating purposes. Depending on the agreement of the parties to the contract, this risk may be borne by the generator or by the end-user itself, who will be obliged to make additional purchases of the "missing" gas fuel. In terms of diversifying the risks associated with ensuring the continuity and stability of the supply of gaseous fuel, one solution may be to consider the possibility of an energy company trading in gaseous fuel in the form of biomethane, possibly natural gas, joining the sales contract in question (as a contracting party).

However, the involvement of such an energy company in the model in question should be significantly limited and is only related to securing the key risk of balancing the continuity of supply of the gaseous fuel consumed by the end-user (commercial balancing). Consequently, the level of risk that the trading company takes on is significantly reduced as to standard market realities. Consequently, the level of margin for this type of service in the gas sector should be significantly lower than for classic contracts with trading companies.

## **2.3. Transport of biomethane in compressed or liquefied form by means of transport other than gas networks**

The transport of biomethane in compressed or liquefied form by means of transport other than gas networks is neither transmission nor distribution within the meaning of the definitions contained in Article 3 point 4 and 5 of the energy law respectively. Consequently, a concession for the transmission or distribution of fuels is not required to carry out the business of transporting biomethane using the above method. Biomethane in the form of bioCNG or bioLNG can be transported by means other than gas networks to vehicle refuelling stations, and can also be fed into the network.

Due to the presence of so-called "white spots" on the map of Poland, i.e. areas without gas networks, natural gas is provided to end-users on the basis of island gasification with the use of LNG regasification stations. The solution for supplying natural gas to facilities using LNG

regasification stations is also being used by business customers whose facilities are located in the so-called “white spot” area. LNG can be successfully replaced by bioLNG in this case. It should be emphasised that there is no legal obstacle to the activity of producing, selling and transporting biomethane in compressed liquefied form by means of transport other than gas networks within a single undertaking. This is because the so-called unbundling principle will not apply in this case. In the current legal framework, biomethane transported to the consumer in compressed or liquefied form by means of transport other than gas networks is not covered by the operational RES support scheme.

It should be borne in mind that the legislator imposes an obligation on a generator engaged in the business of producing biomethane to measure the quantity of biomethane, produced in renewable energy source installations from renewable energy sources and transported by means of transport other than gas networks, on the basis of indications from metering and billing devices, to record this quantity and to convert it into an amount of energy expressed in MWh (Article 60b of the RES act). At present, there is a lack of implementing legislation on the requirements for the indicated measurements, where they are to be taken, and how the amount of biomethane is to be converted into energy expressed in MWh.



# 3

## Biomethane as a gaseous fuel

The possibility of using biomethane in the gas sector has become the subject of detailed legal regulations shaping the rules of conducting this type of economic activity.

A new investment perspective is emerging in many EU countries for the production of biomethane, involving the production of biogas and its subsequent upgrading to natural gas quality parameters and feeding it into the gas network or transport as bioCNG or bioLNG. By using appropriate equipment and purification technologies, it is possible to obtain biogas with the parameters of type E methane-rich gas, i.e. with a methane content exceeding 95%. The main process of biogas upgrading to natural gas quality biomethane is the separation of CO<sub>2</sub> to achieve high methane purity with its lowest possible losses and low energy consumption. The ultimate goal is to ensure that biomethane becomes a sustainable part of the gaseous fuels supply and is consistently used in all industries that use this fuel. As a side note to the presented considerations, it can be pointed out that the traditional methods of biogas upgrading can be divided into the following types of processes: membrane separation, scrubbing (absorption methods), pressure swing adsorption and cryogenic separation. Membrane separation and water scrubbing technologies enjoy some prevalence as preferred upgrading techniques. The use of membranes as a method of biogas treatment has become a market-leading technology. Biomethane is therefore of considerable importance for energy security, efficient decarbonisation of energy systems and transport, local area development and optimisation in the agricultural sector as well as in the context of development and decarbonisation of the chemical industry. Consequently, the legal framework allowing the use of biomethane in the gas sector should be examined in detail.

### 3.1 Legal basis for connecting a biomethane installation to the gas network

With regard to the possibility of transporting biomethane through gas networks, a key element is the conclusion of a network connection agreement with the relevant energy company performing the tasks of a gas distribution or transmission system operator (hereinafter referred to as: a “network company”). In the procedure for concluding a network connection agreement, it is crucial to determine the conditions under which the connection will be technically and economically justified. The network company defines these conditions in a document called “connection conditions” by the legislator. They constitute information communicated by the network company specifying the conditions under which the construction of a given connection will be justified under the provisions of Article 7 clause 1 of the energy law, which simultaneously results in the obligation to conclude a connection agreement during the term of those connection conditions. This information forms the basis for the start of negotiations shaping the final version of the connection agreement, which is the direct source for the implementation of the connection of a given RES installation to the gas network.

It should also be emphasised that, unlike in the case of electricity connections, an application for the determination of connection conditions does not require the attachment of the relevant decision on development conditions or an extract from the local spatial development plan.

With regard to electricity grids, the institution of an advance payment for the connection agreement paid together with the application for the determination of connection conditions was introduced. It is a remedy to discourage unreliable applicants and to give credibility to the desirability of the planned project. This advance should be reimbursed, after appropriate settlement, in the event that the investment intention is abandoned by the entity applying for the connection of a RES installation. If, however, the investment is continued, in accordance with the purpose of this advance payment, it should be set off against the connection fee itself, the terms of which will be established in the connection agreement negotiated by the parties. In the current version of the energy law, the legislator does not require the relevant advance payment to be made and documented with the application for the determination of the connection conditions to the gas network.

The legislator has also adopted a number of legal instruments to support the connection of RES installations to the gas network, although these are far less intensified than in relation to twin biogas installations connected to the electricity grid. In this respect, Article 7 clause 1 of the energy law indicates that despite the assumption of equal treatment of entities applying for connection to the gas network, RES installations should be connected first. However, the legislator does not specify how the priority of connecting RES installations to the network should be implemented in practice. Hence, it seems that the clarification of this additional criterion will have to take place in the practices adopted by the individual network companies, regulated, for example, in their network operation and maintenance manuals. Although this obligation has been drafted by the legislator in very general terms, it seems to oblige network companies to manage their network assets in such a way as to enable RES installations to be connected to the relevant gas network in the first place. Priority consideration of applications for connection conditions for biomethane installations could be a good standard to apply.

A new element introduced to the regulations concerning the connection of biomethane installations to the gas network is Article 7 clause 1e of the energy law, which indicates that in the event of a refusal to issue connection conditions for a RES installation for the production of biomethane due to the lack of technical or economic conditions for connection to the network and offtake in the location indicated by the applicant, the network company shall indicate the nearest alternative location to the applicant, if the connection in that location fulfils the technical and economic conditions.

The legislator also interferes in a special way with the content of the contractual provisions that must be included in the connection agreement - the basic elements of such an agreement are contained in Article 7 clause 2 of the energy law. The mere extension of the network for the connection of installations belonging to those applying for connection thereto is provided by the network company, enabling them to be carried out in accordance with the competition rules also by other entrepreneurs employing staff with relevant qualifications and experience in this field. As a result, the investor is, in principle, only responsible for acquiring the legal title and for constructing the gas pipeline between the connection point designated by the network company and the place where the biomethane installation is to be located. In this respect, it is important that the parties to the connection agreement clearly define the precise scope of the responsibility of both parties for the investment and the construction of the connection, taking

into account the content of the legal provisions in this respect, including the definition of a connection under the system ordinance and well-established case law. Insofar as the network company is responsible for the execution of the connection scope described in the connection agreement, the connection fee related to the connection of sources cooperating with the gas network shall be determined on the basis of the actual expenditure incurred for the connection.

When discussing the process of connecting biomethane installations to the network, it is also worth mentioning another instrument supporting the connection of RES installations in the form of a preferential network connection fee. Balancing the interests of network companies and entities applying for the connection of RES installations, the legislator decided to stipulate that only half of the connection fee determined on the basis of actual expenses should be charged for the connection of a RES installation to the electricity grid. These provisions should be qualified as legal solutions to support the generation of electricity from RES, including biogas. Unfortunately, this type of support instrument does not cover biomethane installations that intend to feed gaseous fuel into the gas network. Hence, the economic burden of connecting the biomethane plant to the gas network is borne by the investor.

However, with regard to the production and sale of biomethane, the conditions for feeding this fuel into the gas distribution network are particularly important. These conditions not only enable the physical transport of and trade in a gaseous fuel in the form of biomethane, but are also an important element for such installations to be covered by an appropriate support scheme. Hence, in the following sections of this memorandum, the quality (physicochemical) parameters of biogas fuel (biomethane) permitted by the network companies should be subjected to particular legal scrutiny. These parameters also apply to bioLNG and bioCNG transported by means other than the gas network, although the flexibility of at least the level of combustion heat is much greater than in the case of connection to the gas network, where the biomethane must meet the specific parameters of the network.

## 3.2 Quality parameters of biomethane

A key element related to biogas production and sale is the detailed conditions for feeding biogas into the gas distribution network and, more broadly, into the gas transmission network. These conditions not only enable the physical transport of and trade in a gaseous fuel in the form of biogas, but they are also an important element for such installations to be covered by an appropriate support scheme.

However, as already indicated, the current quality parameters for feeding biogas (biomethane) into gas network are set out in the recently amended system ordinance. The ordinance specifies, among other things, the quality parameters of all gaseous fuels, including biogas fed into the gas network, as well as the conditions for connecting generation facilities to the network. As far as the quality parameters are concerned, the following physical and chemical properties of biogas fed into the network have been determined:

- hydrogen sulphide content shall not exceed 7.0 mg/m<sup>3</sup>,
- mercaptan sulphur content shall not exceed 16.0 mg/m<sup>3</sup>,
- total sulphur content shall not exceed 40 mg/m<sup>3</sup>,
- mercury vapour content shall not exceed 30.0 µg/m<sup>3</sup>,
- dew point temperature of water at 5.5 MPa shall be:

a) from 1 April to 30 September,  
not more than +3.7 °

b) from 1 October to 31 March,  
not more than -5°C.

Moreover, with respect to combustion heat, this parameter shall not be less than 34.0 MJ/m<sup>3</sup> for biogas (biomethane) fed into network transporting methane-rich natural gas of group E, with a Wobbe index ranging from 45.0 MJ/m<sup>3</sup> inclusive to 56.9.0 MJ/m<sup>3</sup>. The discussed ordinance enables also biogas injection into the network which transport nitrogen-rich gas of subgroups Lw, Ls, Ln, Lm.

However, key changes to the characteristic physical and chemical parameters were introduced as part of the ordinance of the Minister of Climate and Environment of 6 August 2022 amending the ordinance on detailed conditions for the operation of the gas system (Journal of Laws of 2022, item 1899). The document introduces a number of important changes concerning biomethane. Among other things, the amended ordinance defines the quality parameters of gaseous fuels and the technical standards for connection to the network.

With regard to the technical parameters regulated by the ordinance, it is important to point out the changes introduced in § 38, which defines the quality requirements of gaseous fuels transmitted through gas transmission and distribution networks. The combustion heat parameters indicated in § 38 clause 1 point 6, originally only applicable to natural gas, now cover all gaseous fuels transported through gas networks. In addition, points 7-15 and clauses 1a-1c were added within § 38 clause 1. Clause 1 point 7 specifies a maximum oxygen content of 0.5% [mol/mol] in gaseous fuels fed into the network, with the above requirement not applying to gaseous fuels for which:

- dew point temperature of the water in the area of the gas network into which the gaseous fuel is fed is greater than -8°C;
- this fuel will be the fuel source for the storage facility - for which the oxygen content in the gaseous fuel should not exceed 0.2% [mol/mol].

Subsequently, in § 38 clause 1, the added points 8 to 16 for gaseous fuels transported through transmission and distribution networks specified:

- the carbon dioxide content should not exceed 3.0% [mol/mol];
- dust content with a particle diameter greater than 10 µm should not exceed 1.0 mg/m<sup>3</sup>;
- the total siloxane content should not exceed 0.3mg/m<sup>3</sup> converted into silicon;
- the relative density should be not less than 0.555 and not more than 0.700;
- the hydrogen content should not exceed 0.0% [mol/mol];
- the carbon monoxide content should not exceed 0.1% [mol/mol];
- the content of chlorine compounds (as total chlorine) should not exceed 1.0 mg/m<sup>3</sup>;
- the content of fluorine compounds (as total fluorine) should not exceed 10.0mg/m<sup>3</sup>;
- ammonia content should not exceed 2.0 mg/m<sup>3</sup>.



By adding clauses 1a-1c in § 38, the legislator has clarified the way in which the quality parameters established in the paragraph in question are determined. Consequently, in accordance with the ordinance, it is permissible for the quality parameters defined in § 38 clause 1 to be exceeded to the extent resulting from the permissible measurement error of the instrument of the metering and billing system. In the above regard, it was also indicated that the quality parameters for gaseous fuels including hydrogen sulphide, mercaptan sulphur and total sulphur should be determined prior to the odorization process. Under the added provisions, where metering and billing equipment, facilities and networks are adapted for the transmission of gaseous fuels with a higher hydrogen content in such a way as to ensure the safety of end-user equipment, a hydrogen content in gaseous fuels other than that set out in clause 1 point 12 is allowed, but not exceeding 10% [mol/mol].

Through amendments to § 38 clause 5, the catalogue of gaseous fuels with parameters other than those set out in § 38 clause 1 and 3 that can be supplied by an energy company engaged in the transmission or distribution of gaseous fuels at the customer's request has been extended. Consequently, the provision of § 38 clause 5 covers not only natural gas, but also other gaseous fuels. This possibility, until now, has only been conditional on there being no disruption to the gas system. Now, as a consequence of the amendments in question, in order for the supply of gaseous fuel with quality parameters other than those specified in the ordinance to be lawful, it must not result in the deterioration of the conditions for the supply of gaseous fuel to other customers and the deterioration of the quality parameters of that fuel.

As part of the amendments within § 38, clauses 7a to 7b have also been added specifying the obligations of energy companies involved in the production of biomethane with regard to the frequency of testing of the quality parameters indicated in § 38 clause 1. Testing of the aforementioned parameters is carried out by the company at the entry points to the transmission or distribution system (§ 38 clause 7a). The company is obliged to communicate the results of the measurements to the gas (transmission or distribution) system operator. If the result of the measurement indicates an irregularity in the parameters tested, it is incumbent on the biomethane energy company to repeat the test immediately, and if the second test shows that the quality parameters are not met, the operator shall suspend the off-take of the gaseous fuel (§ 38 clause 7b). The frequency of the relevant tests, which stipulate their lowest frequency of "at least once every...", may also prove problematic, which may mean that network companies will require them to be carried out at a higher frequency, with consequent increases in operating costs.

An undoubtedly significant change in the scope of the ordinance in question is also the assignment to the entity feeding biomethane to the network of the responsibility for ensuring the quality parameters required by the operator at the entry point to the gas system (§ 39 clause 3). According to the previous wording of the provision § 39 clause 2, if the quality parameters for gaseous fuels specified in § 38 were not met, an energy company engaged in the transmission or distribution of gaseous fuels could refuse to accept such fuels for transmission. Under the amendments in question, this possibility of refusal applies to the acceptance of fuels for the purpose of their transmission or distribution. It should be noted, however, that the company loses the above-mentioned possibility of refusal, if by providing an additional service, it achieves the quality parameters specified in § 38 for these fuels. It is also worth pointing out the technical requirements for the connection of biomethane generation facilities to the gas network stipulated in point 4.3 of the annex to the ordinance. As part of the changes introduced within the aforementioned point, an obligation has been imposed on an energy company involved in the production of biomethane to install a gaseous fuel quality testing facility and a reverse flow

facility to return biomethane with inappropriate parameters to its generator (point 4.3.3.). In addition, point 4.3.1. lays down the obligation to install equipment for adapting the parameters of biomethane to the quality parameters of gaseous fuels indicated in § 38 of the ordinance, with equipment for increasing the calorific value of biomethane being specified within the above scope. In terms of compression facilities allowing biomethane to be injected into the network at a higher pressure, in accordance with point 4.3.2. they shall be installed at the connection point. An exception to this obligation is the case where the distribution system operator specifies in the connection conditions that the construction of the aforementioned installation is not necessary.

The ordinance of the Minister of Climate and Environment of 6 August 2022 amending the ordinance on detailed conditions for the operation of the gas system modifies the existing rules of the gas system in a way that is important from the perspective of the development of the biomethane sector. The document in question, among other things, by adapting the provisions of the ordinance to the use of gaseous fuels other than natural gas in the gas system, or by specifying the obligations of an energy company producing biomethane, allows the use of biomethane to a wider extent.

However, the above provisions mean that, under the current system ordinance, the quality parameters of gaseous fuels transported via gas transmission and distribution networks are therefore identical to those (apart from the specific parameters indicated in §38 clause 1 points 8 to 16) that biogas (biomethane) must meet. On the one hand, this means that the legislator does not assume any lowering of the quality standards for biogas production injected into the gas network in relation to natural gas transported through it, but on the other hand, due to the identical quality parameters of purified biogas (biomethane) and natural gas, this enables the transport of such biogas using all the elements of the gas network. This means that a RES installation producing biogas, having met all the indicated parameters, can be effectively connected to the gas distribution network, and then the buyer of this gas fuel can effectively transport the produced biogas both via the distribution networks and the transmission networks.

In conclusion, however, it should be pointed out that the system ordinance does not require biogas fed into the gas network to be purified to the parameters of E-type methane-rich gas, and it also allows biogas with a lower degree of combustion heat to be fed into the network. In this context, possible solutions are as follows:

- connection of the biomethane installation to the existing gas network managed by one of the DOg or
- construction of own gas network together with the assumption of the role of DOg on that network, or designation of another entity performing the tasks of DOg on behalf of the network owner.

The option of constructing one's own network, although it involves additional investment outlays, is advantageous since it makes it possible to set individualised physical and chemical parameters of the gaseous fuel fed into the network, within the standards admissible under § 38 of the system ordinance.

Finally, it should also be pointed out that on 15 June 2023, a draft ordinance of the Minister of Climate and Environment amending the ordinance on detailed conditions for the operation of the gas system (No. 1090 in the List of Legislative Works of the Minister of Climate and Environment) was submitted for public consultation.

As indicated in the explanatory memorandum, the purpose of the draft ordinance is, among other things, to make the process of connecting biomethane generation facilities to the gas distribution network more flexible. It is further rightly pointed out that, at present, the possibility of connecting a biomethane plant to the network is determined, among other things, by compliance with the quality parameters of biomethane, including a certain level of combustion heat, while in the Polish market, as a result of the energy crisis and the outbreak of war in Ukraine, high-calorific (high combustion heat) LNG is taking an increasing share in the system. Biomethane, on the other hand, which is characterised by a lower combustion heat, does not, in some billing areas, fall within the limits of the allowable difference in the average heat of combustion value for a given day measured at a given exit point. The consequence of this circumstance is that the distributor is unable to issue connection conditions because the heat of combustion of biomethane is too low in areas where the share of LNG is relatively high.

The solution to this problem is to propose extending the percentage limit of acceptable differences in average combustion heat values to +/-4%. However, this does not appear to significantly improve the ability to issue connection conditions in ORCS (combustion heat value billing area) with levels greater than 40 MJ/m<sup>3</sup>. There is also a lack of comprehensive measures to better integrate RES installations producing biomethane with gas networks and to reduce the levels of parameters such as oxygen and hydrogen, which would make the process of cleaning and supplying biomethane to the gas network much easier. This is all the more justifiable given that, after all, according to EU policy, gas networks are also to be adapted to transport renewable hydrogen itself. Legislative works in this regard have not been completed as at the date of preparation of this memorandum, although on 6 October 2023, information was provided via the Government Legislation Centre that the draft had been approved by the Law Commission and could be referred to the relevant minister for signature.

### **3.3 Obligation to offtake biomethane fed into the gas network**

With regard to the obligation to offtake biomethane fed into the gas network, the basic legal regulation is contained in Article 118 of the RES act, which stipulates that the relevant TSOg and DSOg in the area of their operation, under the terms and conditions resulting from the concluded contract for the provision of transmission or distribution services, provide the service of transmission or distribution of biomethane meeting the quality parameters for gaseous fuels injected into the network, specified in the provisions issued pursuant to Article 9 clause 1 and 2 of the energy law, produced in an RES installation connected to the network of the given operator.

The indicated provision in fact duplicates the earlier regulations concerning agricultural biogas indicated in Article 9c clause 6a of the energy law, although it also includes in its disposition the necessity of off-take of biogas fed into the gas network other than agricultural biogas and extends the obligation in question to the TSOg. The obligation to offtake the produced biomethane is also inextricably linked with the obligation to conclude an agreement for the connection of the installation to the gas network referred to in Article 7 of the energy law, as the

installation must be directly connected to the gas network of the DSNOg or TSOg which fulfils the obligation in question.

The above-mentioned regulations are, therefore, an implementation of legal solutions presented in Directive 2009/73 as well as RED I and RED II, which constitute a guarantee of offtaking any quantity of biogas or agricultural biogas injected into the gas distribution network, fulfilling at the same time relevant quality parameters set out in proper implementing regulations. In this respect, the Polish legislator has also implemented solutions which make it possible to limit the need to offtake biomethane due to a failure to comply with technical quality parameters and safety standards, which may, however, currently result in operators making too extensive use of the premise of a failure to comply with these parameters and standards to refuse to offtake biogas.

The relevant quality parameters allowing for injecting agricultural biogas into the gas distribution network were already discussed in point 3.2 of this chapter. Therefore, having regard to the legal norm resulting from Article 118 of the RES act, it should be pointed out that only a biogas producer's failure to meet the above-mentioned quality parameters is the only basis for refusing to offtake such gaseous fuel in an installation connected directly to the network of a particular DSNOg or TSOg. Thus, if a generator complies with the described quality parameters of biomethane and the relevant operator refuses to accept it, while preventing the transport of these gaseous fuels, the operator is subject to a financial penalty imposed by the President of the ERO on the basis of Article 168 clause 7 of the RES act. The amount of the penalty is severe, as it cannot be higher than 15% of the penalised entrepreneur's revenue resulting from the activity subject to concession.

However, studies conducted on the physicochemical properties of biogas in its unprocessed form (without purification) show that, as a rule, it does not meet the quality requirements imposed by the relevant provisions of implementing regulations (see J. Holewa, E. Kukulska-Zajęc, M. Pęcielska, *Analiza możliwości wprowadzania biogazu do sieci przesyłowej*, Nafta-Gaz 8/2012, pp. 524-529; M. Wiśniecka, J. Holewa-Rataj, E. Kukulska-Zajęc, *Analiza możliwości wprowadzania biogazu do sieci gazu ziemnego*, Instal 11/2016, pp. 38-42; W. Kostowski, K. Górny, *Analiza możliwości mieszania biogazu z gazem ziemnym z uwzględnieniem limitów wymaganej jakości gazu sieciowego*, Instal 3/2010, p. 18). Therefore, the most important condition for feeding biogas into the gas network is to bring its physicochemical parameters to a level that corresponds with the parameters of the gas network.

In this context, it should be further emphasised that the obligation on the TSOg or DSOg to offtake biogas with the above-mentioned technical parameters should not be equated with a purchase obligation concerning at least heat from RES (Articles 116 and 117 of the RES act). This means that a biomethane producer can inject a certain amount of this fuel into the gas network, although in order to sell that gaseous fuel, it needs to find an entity on the market willing to buy that biomethane and use it for its own needs (end-user) or an energy company trading in gaseous fuels. Consequently, the indicated provisions only require the gas network operators to physically off take the biomethane in question and to enable the distribution (transport) of this gaseous fuel. In this context, it is extremely important to find a biogas customer who, taking into account both the material value of biogas (gaseous fuel) and the intangible value of biogas (RES fuel), will ensure the economic viability of the investment in the installations in question producing gaseous fuels from RES.



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