

Branislava Lepotić Kovačević¹, Dragoslava D. Stojiljković^{2*}

¹ JP Transnafta, Belgrade, Serbia,

² Laboratory for Fuel and Combustion, Faculty of Mechanical Engineering,
University of Belgrade, Belgrade, Serbia

Contract on Long-Term Biomass Supply for Energy Generation

Technical paper

One of the goals incorporated in the EU energy strategy is energy generation from renewable sources aimed at achieving a 20% increase in the share of overall gross energy consumption by 2020. Within the process related to the Energy Community and the process of Stabilization and Association, the Republic of Serbia committed itself to incorporate certain EU regulations into its own legal framework. Creating the conditions that encourage utilisation of renewable sources in overall gross consumption of energy is one of the goals of the energy policy of the Republic of Serbia incorporated in the strategic documents related to the energy sector.

Utilization of biomass in production of heat and/or electrical energy is one of the ways of achieving such a goal. However, in order to achieve this goal, it is necessary to provide the necessary quantities of biomass according to the characteristics of the energy facility and the needs of energy consumers.

The current paper presents an analysis of a contract on long-term supply of biomass to be used for heat and/or electrical energy generation including, among other topics, the subject and modalities of this type of a contract and duties and obligations of the contracting parties.

Key words: renewable energy sources, biomass, biomass supply contract

Introduction

Biomass supply contract for energy generation is an innominate contract in our legislation. This type of contract was derived from a contract for supply of goods. The parties to this contract include a biomass supplier and a biomass buyer. The biomass supplier need not necessarily be the biomass producer, same as the biomass buyer need not necessarily be the electricity producer.

Key elements of the contract include the goods *i. e.* biomass and the price, as well as the duration of the contract which is concluded on a long-term basis.

The long-term contract on supply of biomass for energy generation stipulates the obligation of biomass supplier to deliver to the biomass buyer, on a long-term basis, the specified quantity and quality of biomass at a designated point of delivery, while the

* Author's e-mail: dstojiljkovic@mas.bg.ac.rs

biomass buyer undertakes to accept the delivered biomass and to pay the contract price to the supplier. The contract is a prerequisite for a safe and continuous generation of electrical and/or heat energy from biomass. Any interruption in delivery of biomass to the plant for energy generation may result both in interruptions of operation of the plant and in energy generation from a renewable source.

The long-term biomass supply contract for energy generation is a bilateral, commutative, consensual, long-term contract between two parties – the biomass supplier and the biomass buyer.

The subject of the contract is supply of biomass intended for electrical and/or heat generation. Biomass can be used as fuel for an energy facility generating electricity, heat or combined heat-and-power energy in a co-generation process. Biomass has to be of required quality and quantity and supply denotes delivery and sale of biomass on a continuous basis, in partial and successive shipments.

Depending on its key elements, the contract and the contract actual obligations of any of the parties may have several variants. The variants refer to the characteristics of the plant for energy generation since, if the heat energy is only used for heating, then it deals with seasonal energy generation, which differs significantly from the obligation to deliver energy to the customers on a continuous basis. This may also have impact on the fact whether the biomass supplier or the buyer undertakes the obligation to store the biomass or not, and what kind of contractual securities are in place, the terms of delivery and the point at which the proprietary rights and the risk for the delivered biomass are transferred to the other party, which collectively has an impact on the definition of duties and obligations of the parties to the contract.

Definition of biomass

The definition of biomass used in energy generation must be fully harmonized with the relevant legislation. In our country, there is no definition of biomass in the prevailing Energy Law¹, but it is incorporated in the Decree on the Requirements for obtaining the Status of the Privileged Power Producer and the Criteria for Assessing Fulfilment of these Requirements². Biomass, within the meaning of a renewable fuel used in energy generation denotes a biodegradable organic matter originating from agriculture, forestry and supporting industries and households. It comprising the following: plants and parts of plants, fuel produced from plants and plant parts, plant residues and by-products originating from agriculture (straw, maize stalks, branches, stones/pits, and shells/peals), residues of animal origin (faecal matter) originating from agriculture, plant residues in forestry (logging residues), uncontaminated biodegradable residues in food-processing and timber and wood processing industries and separated biodegradable municipal waste fractions. Biomass defined in this manner can also be used for generation of biogas and synthetic gas.

It should be pointed out that biomass does not include any of the fossil fuels, peat, paper or cardboard, textile, animal body parts, industrial waste except waste defined as biomass, municipal waste, waste originating from municipal wastewater treatment plants, and commercial waste.

¹ The Energy Law (Official Gazette of RS, No. 84/2004)

² The Decree on Requirements for Obtaining Privileged Electricity Producer Status (Official Gazette of the RS, No. 72/2009)

Is biomass a hazardous matter or waste?

The notion of a hazardous matter in theory of law and in practice is linked to a special kind of objective responsibility, namely the responsibility for hazardous matter. Likewise, in addition to the responsibility for hazardous matters there is a different notion, namely the responsibility for engaging in hazardous activities. A person is engaged in a hazardous activity if he/she uses a hazardous matter for carrying out its activities. Definitions of a hazardous matter are essentially the same, thus the hazardous matter refers to a movable or immobile matter that, because of its position or use or characteristics may pose an increased risk of damage to the environment and must be supervised or handled with extra care¹. According to the above definition, waste is classified as a hazardous matter.

It is a separate issue whether biomass is waste or not, and this has to do with terminological differences between the regulations in the energy and environmental sectors. Within the meaning of the energy sector regulations, there is a distinction between the power plants using biomass and those using waste. Certain types of biomass can be classified as waste² within the meaning of environmental regulations³. Depending on the type of biomass, certain types of biomass could be classified as waste. Waste is any substance or item included in the list of categories of waste (Q- List) that its owner rejects, intends to reject or is obliged to reject in compliance with the law regulating waste management. In such a case, in compliance with environmental regulations (the Law on Waste Management⁴ and relevant by-laws), for some traded forms of biomass it is necessary to obtain in advance the relevant permits⁵ from the Ministry for Environmental Protection and Spatial Planning, while there are no such requirements for other traded forms of biomass.

Obligations of contracting parties

The obligations of contracting parties under a long-term biomass supply contract for energy generation can be regarded as obligations of the supplier and obligations of the buyer.

Main obligations of the biomass supplier include: continuity of production/collection of biomass for the purpose of delivery, delivery of the required quality and quantity of biomass, issuance of a Certificate/Guarantee of biomass origin, storage of biomass for the purpose of delivery, delivery of biomass, and insurance of biomass.

¹ Legal lexicon, the Second Amended and Supplemented Edition, published by Savremena administracija, Belgrade, 1970, p.709. A very broad interpretation of a hazardous matter by the Case Law includes masses of spectators on a football match, a vessel filled with carbonated water or a dog, for example.

² In line with the process of association to the European Union, it is necessary to implement in the Republic of Serbia the provisions of numerous EU regulations, including, among others, those in the field of waste management, such as the Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of Waste. The substances that are not subject to the said Directive are listed under Article 2, paragraph 2, sub-paragraphs i), ii), iv) of this Directive.

³ Rulebook on conditions and manner of collection, transport, storage and treatment of waste that is used as a secondary raw material or for energy production (Official Gazette of RS, No. 98/2010) includes a definition of waste used for energy generation. This is the waste that can be re-used *i. e.* recycled for energy consumption, respectively its calorific value of waste used by a biodegradable or thermal treatment generating energy, electricity and/or heat and electrical energy (agricultural waste, municipal waste, tyres, used solvents, waste from oil refineries, biomass, mud from mud treatment plants, *etc.*)

⁴ Law on Waste Management (Official Gazette of RS, No. 36/2009).

⁵ Depending on a specific case, for utilization of biomass that can be classified as waste according to the regulations referring to the environmental sector, it is necessary to obtain the following permits: permit for waste collection, permit for transport of waste, permit for waste treatment and waste deposit (there is a possibility of obtaining an integrated permit).

Obligations of the biomass buyer include acceptance of biomass and payment for the delivered biomass.

Both contracting parties are obliged to notify each other accordingly during implementation of the contract. At the time of negotiating the contract, one should bear in mind the characteristics of biomass *i. e.* the fact that this is a highly voluminous type of goods the transport and reloading of which have a considerable impact on the ultimate goal and that is the cost of biomass as an energy carrier used in generation of electrical and/or heat energy.

Obligations of the supplier

Continuity of production/collection of biomass for the purpose of delivery is the supplier's obligation that depends on the requirements of the biomass buyer. If the biomass is intended for uninterrupted electricity generation, the buyer shall request from the supplier to ensure the continuity of shipments or the buyer will take upon himself to provide sufficient storage space (his own space or leased one). In case of heat generation for heating purposes, there is a discrepancy between the scope of production and consumption of biomass. Also, each season is different, and therefore the quantity and quality of biomass may vary. Consequently, even if the supplier himself is the biomass producer sometimes he may have to purchase biomass from one or more sources in order to meet his contractual obligations. Such collection of biomass may actually mean collection of biomass in the fields, in the forests, *etc.* Since the contract is a long-term one, the biomass supplier is definitely the person engaged in this type of activity, and most frequently, he is under the obligation to provide the specified quantity and quality of biomass since otherwise the energy producer would have to purchase biomass for each specific case which would impose a significant risk on this operations, and the nature of the contract would be reduced to an ordinary sales contract. Continuity of supply and guaranteed deliveries of specified quantity and quality of biomass may play a significant role in providing financing for the whole effort.

Delivery of specified quality and quantity of biomass is a major obligation of the supplier, since the way this obligation is defined will have a direct impact on the price the buyer will have to pay. Quality of biomass is most frequently discussed as an extremely important parameter both for the plant design as well as for undisturbed and safe operation of the plant. In addition, the quality of biomass has to be an integral part of the contract, too, since it represents the basis for calculation of payments for the delivered goods. The price to be paid includes a number of other elements that will be discussed later on. The basis for calculation of the delivered biomass shall include the following:

- (1) *Quantity of biomass to be delivered* – calculation of the quantity of biomass is most frequently done according to its mass and only rarely according to its volume (in cases when the biomass originating from the same supplier is transported by the same means of transportation having exactly specified storage volume); and
- (2) *Quality of biomass* – moisture content and calorific value (in certain cases, contents of ash can also be defined).

Payment calculation for the delivered biomass is most commonly done in two ways, namely:

- (1) *Principle of payment per delivered quantity (biomass mass)* – this principle is applied only in cases when biomass moisture content varies within a narrow range

(for example: wood shavings stored in a way that does not allow its exposure to weather conditions); and

- (2) *Principle of payment per quantity of delivered energy (payment according to calorific value of biomass)* – this is the most commonly applied principle. For certain types of biomass, mean value of biomass calorific value is defined *i. e.* the price per unit of energy. At the time of delivery of biomass, moisture content in biomass and actual calorific value of biomass are established and the quantity (mass) of delivered biomass is admeasured and multiplied by the defined unit price per calorific unit. The procedure of measuring the moisture content must be clearly specified in the contract (it is defined based on the type of biomass, traded form it is delivered in and method of delivery). In some cases, if there is a possibility of having varied ash content in biomass (*e. g.* due to impurities), from time to time the ash content is also admeasured, and the calculation of payment for the supplied biomass is amended accordingly.

Monitoring of biomass quality has proved to be of extreme importance in the European Union, especially with development of biomass market and constantly increasing imports. In order to overcome the issues raised, the standard EN 14961: Solid biofuels – Fuel specifications and classes has been adopted. The aforementioned standard refers to different types of biomass (agricultural and forest products, herbaceous waste from agriculture and forestry, *etc.*), defining the most important characteristics (scope and mean values) for each type of biomass. Biomass characteristics specified under this standard can be used as a basis for definition of certain contractual items (for example: mean calorific value).

Issuance of Certificate/Guarantee of biomass origin is still not sufficiently regulated obligation of biomass supplier in our legislation. This Certificate/Guarantee¹ is important for the principle of sustainability that refers to biomass use. This principle has been prescribed by the United Nations Convention on Climate Change² and it is also derived from the Directive 2009/28/EC³ for which for the time being, there are no prescribed deadlines for implementation that the Republic of Serbia has committed to. In essence, this Certificate/Guarantee is to establish the origin of biomass, and in this way to control if the biomass supplier is producing biomass in a sustainable manner, without devastating the land, forests, *etc.* The Law on Environmental Protection⁴ stipulates the principles of environmental protection, including the principle of sustainable development, principle of preservation of nature values, the principle of prevention and precautionary principle...It is important to distinguish between the Certificate/Guarantee of biomass origin and the Guarantee of energy origin regulated by the Directive 2009/28/EC and stipulated in the Draft Energy Law⁵.

¹ Certificates/Guarantees of biomass origin should be distinguished from Certificates of origin which are of importance for foreign trade business.

² The Law on ratification of the UN Framework Convention on Climate Change with Annexes (Official Gazette of FRY – “International Treaties” No. 2/97).

³ Directive 2009/28/EC of the European parliament and of the council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

⁴ Article 9 of the Law on Environmental Protection (Official Gazette of RS, Nos. 135/2004 and 36/2009). In Article 3, paragraph 3) of this Law it is stipulated that “natural value is natural wealth which comprises air, water, soil, forests, geological resources, plants and animal life”.

⁵ Draft Energy law – Public hearing on the Energy Law, <http://www.drustvo-termicara.com/vesti/javna-rasprava-nacrta-zakona-o-energetici> and www.mre.gov.rs on June 6, 2011 – Article 2, paragraph 4) guarantee of origin is a public document that certifies that an electricity producer has produced the electrical energy from renewable energy sources.

The obligation of issuance and possession of a Certificate/Guarantee on biomass origin should be regulated in the scope of the National Action Plan for renewable energy sources that is subject to Government's activities within the process of implementation of the Directive 2009/28/EC. To this aim, it may be recommended that the Certificate/Guarantee of origin should be an integral part of a long-term contract on biomass supply for energy generation, and its contents and method of issuance should be stipulated in the relevant by-law.

Obligation of storing biomass prior to delivery is another element of a long-term contract on supply of biomass. The method used for storing of biomass depends on the type of biomass and it could be stored outdoors or indoors which will affect the characteristics and price of biomass. Biomass can be stored at the supplier's or at the buyer's and the contract should stipulate in more detail their mutual relationship regarding this issue. Storing has to be performed fully in compliance with the relevant regulations for the specified type of biomass in order to prevent degrading of biomass quality (moisture and decay).

Biomass delivery means handover of the specified quality and quantity of biomass to the buyer at a specified place. Delivery of biomass under this contract should be in incremental and successive shipments with certain continuity that renders it a long-term characteristic. A delivery that is not continuous, successive and incremental can result in problems related to energy generation. In order to effect the delivery it is necessary for the supplier to announce the delivery so that the buyer could take it over. Delivery of biomass means that there is a distance between the place of production or collection of biomass and the place of acceptance of biomass or use of biomass for energy generation, therefore it is necessary to organize transportation of biomass. Delivery of biomass may take place at the supplier's place and storage or at the buyer's place and storage.

Delivery of biomass could possibly be effected at the places where biomass is produced *i. e.* at the supplier's but this manner can be inefficient, particularly if several sites *i. e.* different producers are involved. An important issue in this case would be the place of delivery out of season, when there is no biomass production. A contract on long-term supply of biomass to be used for energy generation should specify in full detail the terms of delivery that would include the actual place of delivery and the point at which the proprietary rights and the risk are transferred from the supplier to the buyer *i. e.* transfer of responsibility for the delivery of biomass from the supplier to the buyer. The terms of delivery define the party responsible for insurance of effected delivery.

Insurance of biomass against accidental loss or damage on things may be an obligation of the supplier or the buyer. Insurance of biomass may only cover the period of delivery, but it may also cover the period from biomass storing until the moment that energy has been generated from the said biomass. The mere fact that the contracted quantity of specified quality of biomass has been produced or collected can also be insured. In case the supplier pays for the insurance, such insurance is certainly included in the price of biomass. In any case, this cost shall be included in the price of generated energy. If the insurance is the contractual obligation of the supplier and if the biomass is insured until the moment of energy generation but the place of delivery is not the buyer's place, the supplier is obliged to handover the insurance policy to the buyer at the moment of handing over the biomass to the buyer.

Obligations of the buyer

Acceptance of biomass is the obligation of the buyer that is reciprocal to the supplier's obligation to deliver biomass for energy generation. The buyer should make timely preparations for acceptance of biomass at the place where the acceptance is due to take place. The most commonly applied way is that the biomass is accepted at the buyer's place, at the buyer's warehouse so that he could efficiently carry on with energy generation. In this case, the role of the buyer is a very passive one. Continuity of deliveries is particularly important.

Payment for delivered biomass can also be effected in several ways (time wise and model-wise). Payment may be effected in advance during the currency of the contract, or it can be effected after completion of all deliveries. Still, since this is a long-term contract that includes incremental, successive shipments, payment is most commonly linked to each particular shipment – prior or after each partial shipment and it can be made on monthly or annual basis. In any case, the contracting parties should settle their respective accounts upon completion of the currency of the contract on annual basis.

Liability of the supplier and the buyer for fulfilment of contractual obligations

Causing damages is one of the sources of obligations, since by causing damage to another party there is an obligation of the defaulting party to compensate the party that has suffered the damage. The liability may be contractual or delictual.

Contractual liability for the damage caused to the other party is directed at compensation of the damage to the other contracting party. Still, when damage is caused to the other contracting party, it may happen that damage is also caused to a third party, which is a form of liability for the hazardous matter or for carrying out a hazardous activity. An element of this contract that shall, in any case, include liability to third parties is the liability for the damage caused to third parties during transportation of biomass from the place of production/collection up to the place of consumption. Likewise, liability for the damage caused to the other contracting party or to third parties may arise during storing. Another type of damage is the damage resulting from polluting of the environment. If a certain type of biomass is considered a hazardous matter, in such a case liability of the party causing the damage is upgraded to the level of objective liability, through no fault of one's own.

In addition to the aforementioned, the supplier may be liable to the buyer for the damage caused due to non-performance or undue performance of his contractual liabilities. The buyer may cause damage to the supplier for the same reasons.

In order to mitigate or eliminate harmful consequences of non-performance of contractual obligations by either of the contracting parties or in order to define well in advance the scope of compensation for the damage, the contracting parties may specify the amount of penalties, impose a bank guarantee on the buyer for payment of fulfilled obligations, as well as to impose a performance bond on the supplier. There are also other ways to secure performance of contractual obligations, respectively to reimburse the damage due to non-performance or disorderly performance of contractual obligations. As for the liability for non-performance of contractual obligations under the contract for supply of biomass for energy generation is concerned, development level of

biomass market also plays a significant role. The more developed the biomass market is, the better the possibilities of obtaining the required quality of biomass in case of non-delivery or improper delivery (of individual shipment), and detrimental consequences due to non-performance or improper delivery of biomass are less and easier to overcome through re-purchase of biomass elsewhere, *etc.* Otherwise, actual securities provided in favour of biomass buyer (mortgage, security) are of particular importance in case of non-delivery or improper delivery of biomass fuel for energy generation, so that the buyer could reimburse the energy buyers for the interruptions in energy generation.

Conclusions

The importance of contracts on long-term supply of biomass for energy generation is reflected in implementation of the principle of sustainability implemented in the energy sector through the commitment to increase the share of renewable sources in gross energy consumption, in compliance with local and international obligations arising from the Agreement on Energy Community, Agreement on Stabilization and Accession¹, *etc.*

Use of renewable energy sources in the Republic of Serbia involves construction of the plants for generation of electrical and/or heating energy, including energy facilities that use biomass as energy carrier. The facilities using biomass as energy carrier for generation of electricity and heating energy in co-generation processes are particularly energy-efficient plants, which has an additional impact on sustainable development.

In case that at the time of preparing the feasibility study for energy generation from biomass a producer of heating and/or electrical energy from biomass, who is in this case the biomass buyer, does not have a secured supply of the carrier – through a long-term contract for biomass supply for energy generation, such an investment shall neither have clearly defined economic parameters for determining the price of the finished product – energy, nor the required secured supply and consequently, neither shall the investment itself become sustainable.

For the purpose of achieving the investment in facilities that use biomass for energy generation, a contract on long-term biomass supply for energy generation will be a significant means of securing the economic viability of such an investment. In this context, the biomass supplier should have at his disposal access to the necessary means – the land, warehouses – that would guarantee a secured supply.

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¹ The Law on the Ratification of the Treaty Establishing the Energy Community between the European Union and the Republic of Albania, the Republic of Bulgaria, Bosnia and Herzegovina, the Republic of Croatia, the Former Yugoslav Republic of Macedonia, the Republic Montenegro, Romania, the Republic of Serbia and the United Nations Interim Administration Mission in Kosovo, pursuant to United Nations Security Council Resolution 1244 (Official Gazette of RS, No. 62/2006) and the Law on Ratification of the Stabilization and Association Agreement (SAA) between the European Communities and their Member States, on the one part, and Serbia, on the other part. (Official Gazette of RS, No. 83/2008).

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Апстракт

Бранислава ЛЕПОТИЋ КОВАЧЕВИЋ¹,
Драгослава Д. СТОЈИЉКОВИЋ^{2*}

¹ ЈП Транснафта, Србија

² Лабораторија за горива и сагоревање,

Машински факултет, Универзитет у Београду, Београд, Србија

Уговор о дугорочном снабдевању биомасом за производњу енергије

Производња енергије из обновљивих извора и повећање коришћења обновљивих извора енергије на 20% у укупној бруто потрошњи енергије до 2020. године, један је од циљева енергетске стратегије Европске уније.

Кроз процес Енергетске заједнице и процес Стабилизације и придруживања, Република Србија је преузела обавезу имплементације одређених прописа Европске уније у свој правни оквир. Као циљ Енергетске политике Републике Србије, утврђено је стварање услова за стимулисање коришћења обновљивих извора у укупној бруто потрошњи енергије, што је преузето и у стратешким документима у области енергетике.

Коришћење биомасе за производњу топлотне и/или електричне енергије је један од начина остваривања овог циља. Ипак, да би се овај циљ остварио, потребно је обезбедити неопходну количину биомасе, сходно могућностима самог енергетског објекта и потребама купаца енергије.

У овом раду се анализира уговор о дугорочном снабдевању биомасом за производњу топлотне и/или електричне енергије, а између осталог и појам, предмет, модалитети овог уговора, обавезе и одговорност уговорних страна.

Кључне речи: *обновљиви извори енергије, биомаса, уговор о снабдевању биомасом*

Електронска адреса аутора: dstojiljkovic@mas.bg.ac.rs

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