

INFORMATION MEMORANDUM OF THE PROJECT

“Design and construction of the incineration plant from municipal waste energy with the peak load boiler, financing of investment outlays, infrastructure management, including the delivery of heat to the district heating network in Olsztyn and the thermal treatment of the combustible fraction from municipal waste with energy recovery”.



Olsztyn, December 2017

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1. General characteristics and conditions of the Project

1.1. General description of the Project

The purpose of the project is the joint implementation by the Miejskie Przedsiębiorstwo Energetyki Ciepłej Spółka z o. o. in Olsztyn (hereinafter referred to as **"MPEC"** or the **"Public Entity"**) and the selected Private Partner two priorities: (i) ensuring the heat supply to the inhabitants of Olsztyn, and (ii) ensuring the thermal conversion of the combustible fraction from municipal waste resulting from the segregation of secondary raw materials from the Warmińsko-Mazurskie Voivodeship. In order to achieve these goals, it is necessary to build a new Installation consisting of a thermal waste treatment installation (hereinafter referred to as: **"Incineration Plant"**) and a peak load boiler (hereinafter referred to as: **"Peak Load Boiler"**) and subsequently the management of generating units, i.e. the Incineration Plant and the Peak Load Boiler (hereinafter jointly referred to as: **"Installation"**) (hereinafter referred to as: **"Project"**).

At present, ca. 50% of heat for the inhabitants of Olsztyn is supplied by the Heat Plant Kortowo owned by MPEC, the remaining 50% of heat demand being met by buying the heat from the CHP, which is owned by Michelin Polska S.A. Both of the installations use coal for production of energy. Within the next few years a change on the heat production market in Olsztyn will take place, because Michelin Polska S.A. has decided that it intends to cease supplying heat for the municipal demands and concentrate only on satisfying its own needs. Therefore, it is necessary to launch a new source of heat, which on the one hand will allow to manage the energy fraction of the waste remaining after the treatment and sorting of the secondary raw materials generated in Warmińsko-Mazurskie Voivodeship, and on the other hand will guarantee meeting the heat demand of the inhabitants of Olsztyn. The new source must achieve the full production capacity by the end of 2022, because only until this time the CHP of Michelin will be allowed to function pursuant to the so-called heating derogation. In order to ensure the continuity of heat supply to the inhabitants, on 25 November 2015 MPEC and Michelin Polska S.A., with the participation of the President of Olsztyn, concluded an agreement in which they declare to maintain cooperation until 31 December 2022.

The implementation of the Project will allow to close the waste management system in the region. The establishment of the Installation will allow the management of waste in the Warmińsko-Mazurskie Voivodeship in a manner consistent with the hierarchy of management of municipal waste. It should be noted that currently the waste management system in the Warmińsko-Mazurskie Voivodeship ensures compliance with the hierarchy of: selective collection at source, material recovery, composting and recovery of the energy fraction in the process of mechanical and biological treatment of municipal waste (MBP), which is carried out in the Regional Municipal Waste Treatment Plant (hereinafter referred to as the **"RIPOKs"**). However, there is no final stage of waste management, i.e. the development of a combustible fraction from municipal waste. Construction of the Installation will in particular enable the development of approx. 45 - 50 thousands of tons of high-calorific combustible fraction of waste produced by Zakład Gospodarki Odpadami Komunalnymi Sp. z o.o. located in Olsztyn (hereinafter referred to as **"ZGOK"**), in the immediate vicinity of the plot on which the construction of the Installation is planned and which fraction requires further development. The Installation will also use a combustible fraction of municipal waste from other RIPOKs located in the Warmińsko-Mazurskie Voivodeship. The Incineration Plant will thermally convert about 100 thousands of tons of combustible fraction from municipal waste.

The Project will have a significant positive impact on the natural environment mainly by reducing the environmental results of municipal waste generation, eliminating waste storage at the landfills, as well as by improving energy efficiency (high efficiency cogeneration) and reducing emissions of CO₂ and other greenhouse gases.

The realisation of the Installation has been approved by the local authorities and the Minister of the Environment. The Project was included in the "Low Carbon Economy Plan for Olsztyn" and **the update of the "Assumptions to the heat, electricity and gas fuel supply plan" adopted by the City Council of Olsztyn with**

the Resolution No. XII/152/15 of 26 August 2015. The construction of a new thermal waste conversion installation (Incineration Plant) has also been provided for in **the Waste Management Plan for the Warmińsko-Mazurskie Voivodeship for 2016-2022 (hereinafter referred to as "WPGO")** adopted by the Voivodeship Council of Warmińsko-Mazurskie Voivodeship with the resolution No. XXIII/523/16 of 28 December 2016 and in **the Investment Plan, agreed with the Minister of the Environment, being an attachment to the WPGO.**

MPEC carries out the Project on the basis of the following documents:

- a) Resolution of the Extraordinary Shareholders' Meeting No. 21/16 of June 20, 2016 on the security of heat supply for the inhabitants of the City of Olsztyn;
- b) Statement of the City Council of Olsztyn of 29 January 2014 containing a position on: ensuring the supply of heat to the inhabitants of Olsztyn while at the same time using alternative fuels from municipal waste treatment;
- c) Resolution No. 27/12 of 27 November 2012 of the Extraordinary General Meeting of Shareholders of the Miejskie Przedsiębiorstwo Energetyki Ciepłej Spółka z ograniczoną odpowiedzialnością in Olsztyn, in which the General Meeting authorized the Management Board of MPEC to conduct the selection process for the private partner to secure/provide heat supplies to the district heating network based on the PPP Act and the Public Procurement Law;
- d) Resolution No. 3/12 of 19 January 2012 of the Extraordinary General Meeting of Shareholders of the Miejskie Przedsiębiorstwo Energetyki Ciepłej Spółka z ograniczoną odpowiedzialnością in Olsztyn, in which the General Meeting of Shareholders authorized the Management Board of MPEC to conduct the preparatory actions related to securing the supply of heat to the inhabitants of Olsztyn after 2015.

The main goals that will be achieved through the realisation of the Project include:

- management of the combustible fraction generated from municipal waste remaining after the segregation of secondary raw materials through thermal conversion together with energy recovery as a completion of the process of municipal waste management in the Warmińsko-Mazurskie Voivodeship;
- improving the energy security of Olsztyn residents – securing the long-term supply of heat to the district heating network;
- limiting the impact of heat sources on the environment by significantly replacing carbon fuel with less emitting fuel.

Realisation of the Project will also allow to achieve specific objectives, such as:

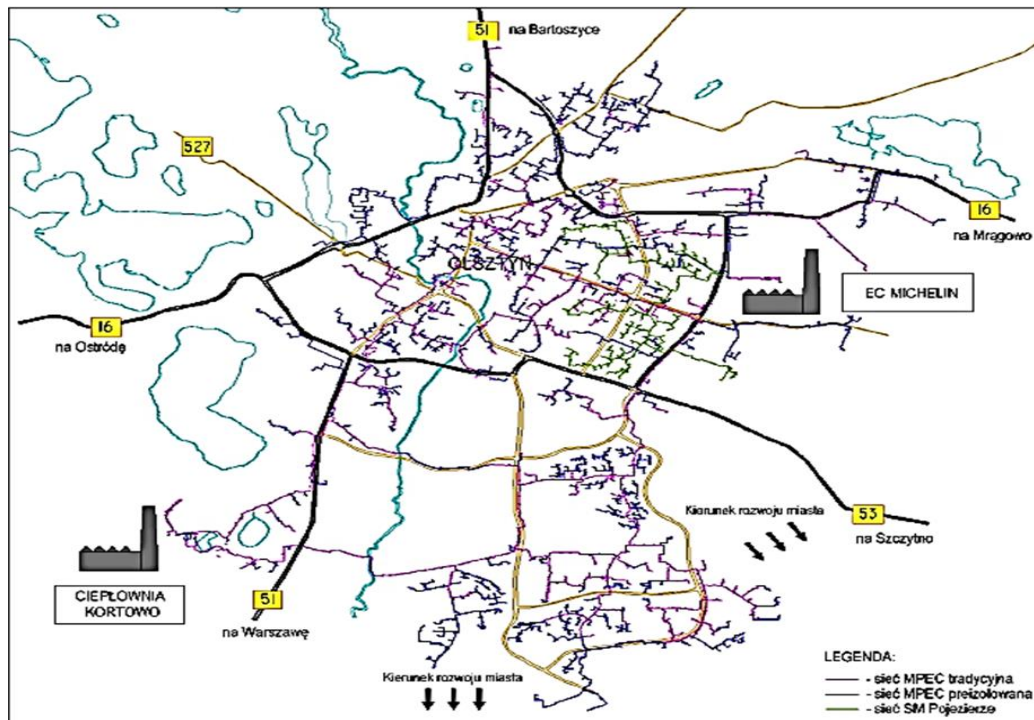
- increase the amount of waste managements in the recovery process, including energy recovery from waste;
- diversification of fuels used to secure thermal needs of Olsztyn;
- reduction of the environmental risks of landfilling;
- reduction of emission of CO₂ and other greenhouse gases;
- improving energy efficiency;
- increase the amount of energy produced from renewable sources.

1.2. Characteristics of the current heating system in Olsztyn

Heat for the needs of the city of Olsztyn is currently being produced in two central sources, i.e. Heat Plant Kortowo – owned by MPEC in Olsztyn and CHP of Michelin. Heat generated in central sources is delivered to final customers through MPEC's Municipal Heating Network. Moreover, the heat is supplied to the "Pojezierze" Housing Cooperative, which has its own cooperative heating network, directly from the Michelin Thermal Power Station.

Heat Plant Kortowo uses coal combustion processes with the possibility of co-firing small amounts of biomass (about 10% of the fuel charge). It consists of 6 water boilers with a nominal capacity of 29 MW each, from which the boiler No. 5 has been put out of operation because of the need to obtain the so-called heat derogation, i.e. retraction during the modernization of the heat plant (max. until the end of 2022). Furthermore, MPEC operates 6 gas-fired boilers, located outside the coverage of the Municipal Heat Network with a total heat demand of 4.3 MW. During the winter season both central sources, i.e. Heat Plant Kortowo and CHP Michelin, work in a split configuration, while in summer the needs of the entire system are usually covered by one of these sources.

The general scheme of district heating network of Olsztyn is shown below:



Source: MPEC's own materials.

The remaining part of the city's heat needs is covered by local boilers, individual sources fed with fossil fuels (mainly coal and natural gas) and to a small extent of RES. Local boilers include boilers producing heat for the needs of their own industrial plants, public utilities and multi-family residential buildings. Significant part of small heat sources is characterized by relatively low efficiency, high emission of uncleaned exhaust gas and low range of pollution propagation. The Low Carbon Economy Plan assumes a change in the way heating of a significant part of these facilities is eliminated by the elimination of local heating sources, which are characterized by high emissions of pollutants into the air and their connection to the Municipal Heating Network. This situation creates the opportunity for further development of systemic heat in Olsztyn as the most efficient and with the least impact on the environment. **In the planning documents of the city - network heat is indicated as the preferred way of heating objects. Also MPEC policy on the connection of new facilities is very effective, because within the last 10 years objects with a total installed capacity of about 100 MW have been connected to the Municipal Heating Network.**

1.3. Characteristics of the target heating system in Olsztyn

In the environment of MPEC, there are changes in operating conditions, largely due to EU regulations, i.e. Directive 2010/75/EU of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (the so-called "IED directive"), which radically increases emission requirements for fuel combustion

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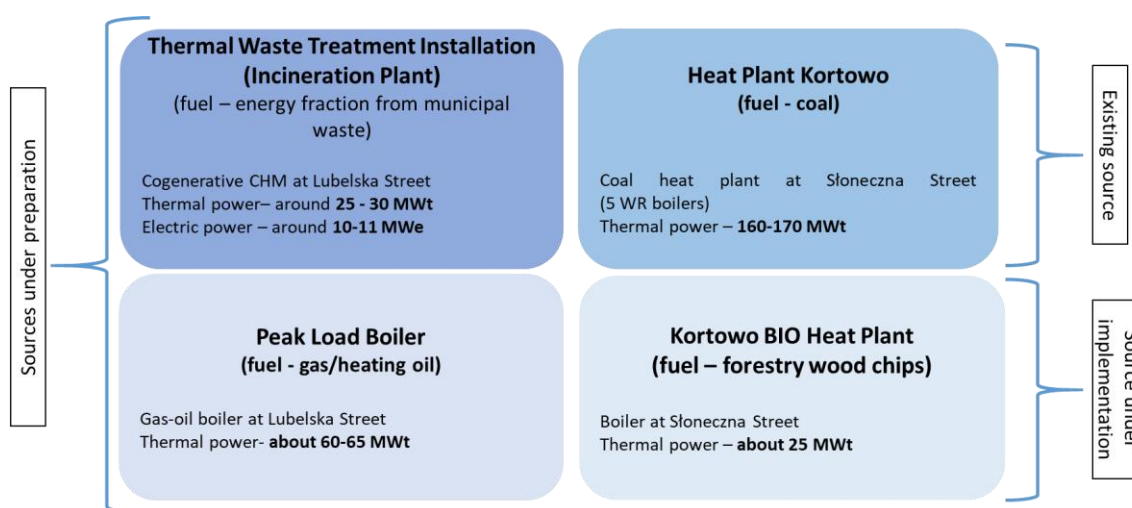
sources since 2016, and changes in the EU CO₂ allowance trading system (the so-called EU ETS system), which introduce a radical reduction of volume of free emission allowances from 2013.

MPEC is currently undertaking a number of actions to adapt the existing model of the heating system in Olsztyn to the changing legal and factual circumstances.

The activities and projects carried out by MPEC are intended to ensure that the target heating system in Olsztyn had the status of the so-called “energy-efficient heating system” and was fed from the following heat sources:

- the existing Heat Plant Kortowo, fired with coal and partially biomass, located at Słoneczna Street in Olsztyn, owned by MPEC,
- The Kortowo BIO Heat Plant, fired with biomass, i.e. a newly built unit by MPEC on a real estate at Słoneczna Street in Olsztyn in the vicinity of the existing Heat Plant Kortowo,
- The Incineration Plant incinerating municipal waste, built in the framework of the PPP Project by the Private Partner on a real estate at Lubelska Street in Olsztyn,
- The Peak Load Boiler fired with natural gas or heating oil, built in the framework of the PPP project by the Private Partner on a real estate at Lubelska Street in Olsztyn.

Target structure of the generating sources supplying the Municipal Heating Network in Olsztyn



Source: own study

1.3.1. Modernization of the existing Heat Plant Kortowo (environmental and efficiency)

The existing Heat Plant Kortowo uses mainly coal for heat production and it does not meet the stricter requirements for emissions set out in the Directive 2010/75/EC of 24 November 2010 on the industrial emissions (integrated pollution prevention and control) (the so-called “IED directive”). At the same time the installation benefits from the derogation referred to in Article 35 paragraph 1 of the IED directive, in accordance with which, under certain conditions, the combustion plant may be exempted from compliance with the emission limit values referred to in this Directive, but no later than 31 December 2022. Therefore, in order to adapt to the stricter requirements in terms of the emission value, the Heat Plant Kortowo will have to be modernized by the end of 2022.

MPEC, as a result of the procedure initiated in the form of requests for tenders addressed to 9 reputable entities, has chosen the tenderer, the SEFAKO enterprise which will develop the concept of modernization of

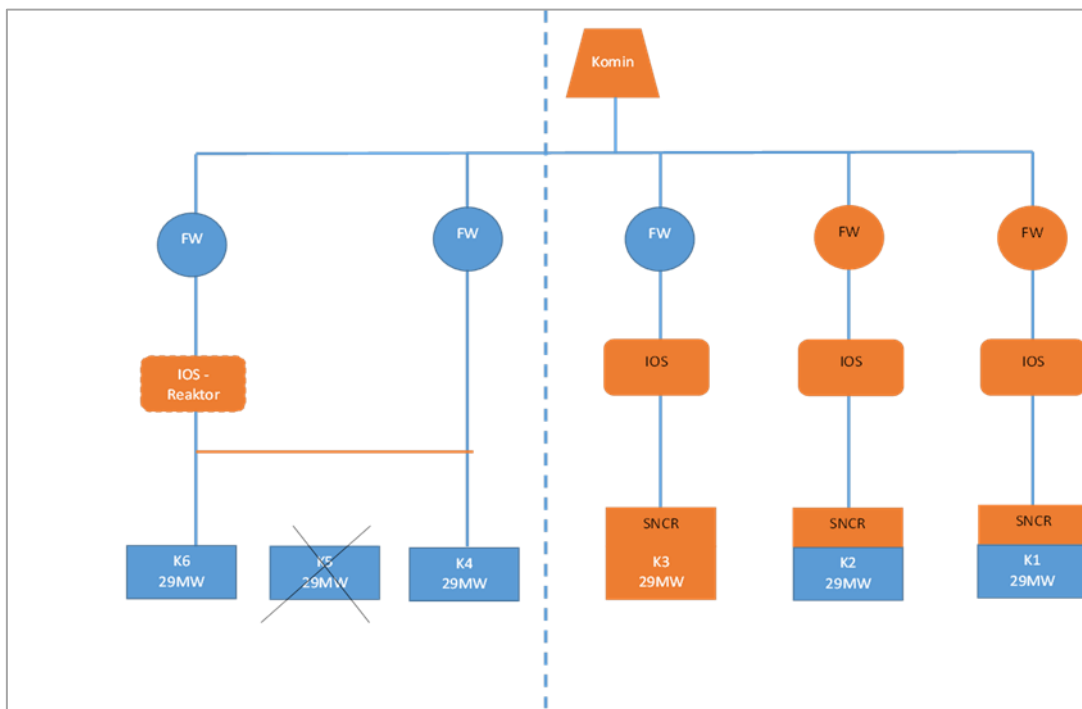
the Heat Plant Kortowo in order to meet the emission standards required by the IED directive and to extend its useful life along with the valuation of the investment and operation costs, which will be necessary to bear as a result of the modernisation.

Boiler No. 5 has been put out of operation in order to meet the requirements of the derogation for the Heat Plant Kortowo of Article 35 paragraph 1 of the IED Directive. On the other hand, the boilers No. 1 and 2 included in the Heat Plant Kortowo have already been upgraded to tight walls and are adapted to the co-incineration of biomass. Boilers Nos. 4 and 6 will work at the summit, below 1500 h per year, hence their modernization is not required.

In view of the above, the following tasks will be carried out within the modernization of the existing Heat Plant Kortowo (indicated in orange on the scheme below):

- reconstruction of boiler No. 3 to tight walls and towards the possibility of biomass co-combustion with hard coal;
- construction of exhaust desulphurisation (IOS) and exhaust denitrification (SNCR) for boilers 1, 2 and 3;
- construction of dedusting installations (bag filters) for boilers 1 and 2;
- construction of a new chimney adapted to new emission parameters.

Scheme of environmental and efficiency modernization



Source: Own study

Legend:

K1, K2 – modernized boilers for tight walls with the possibility of co-firing biomass

K3 – boiler for modernization on tight walls and towards co-firing of biomass

K4, K6 – reserve-peak boilers operating below 1500 h / a

FW – Bag filter – Dust Extraction Installation

CF – Cyclopenters – Dust Extraction Installation

IOS – Exhaust Desulphurisation Installation

K5 – out of service boiler

IOS – Reactor - Exhaust Desulphurisation Plant existing reactor

SNCR – exhaust denitrification installation

Komin – chimney

Environmental-efficiency modernization will be implemented by MPEC. Its cost has been estimated at around PLN 40-50 million. The funds to finance the modernization will come from the sale of certain assets to a Private Partner under the implemented PPP Project. It is also considered to attract a possible equity investor who will inject capital to MPEC, taking up new shares in the increased share capital of MPEC in exchange.

Modernization will not require a complete shutdown of the heat plant from operation and will be implemented in 2019/2020.

1.3.2. Construction of the Kortowo BIO Heat Plant

Generally, the construction of the Kortowo BIO Heat Plant is a part of the broadly understood modernization of the Heat Plant Kortowo. However, it constitutes a separate investment. Kortowo BIO will be built as a separate, independent heat source on a real property at Słoneczna Street in Olsztyn, in the vicinity of the existing Heat Plant Kortowo. Kortowo BIO will replace the boiler No. 5 (indicated on the scheme of environmental and efficiency modernization included above), which has been put out of operation.

The main function and purpose of Kortowo BIO will be to assure the covering of the heat demand for the customers connected to the Municipal Heat Network for about 5 500 during the winter season. Furthermore, Kortowo BIO will serve as a heat reserve source in the case of stoppage or reduction of the production capacity of the elements responsible for covering the heat demand in the summer season.

Kortowo BIO will be equipped with a water boiler of 25 MWt, fired with biomass in the form of wood chips, along with the accompanying infrastructure, i.e. building, fuel delivery system, dust extraction and, if necessary due to the provisions of law binding on the day of commissioning, also with desulphurisation and nitrogen oxides reduction systems. The new heat plant will be characterized by highly efficient heat production, maintaining all standards and requirements in terms of environmental protection.

Kortowo BIO Technical Parameters:

Type	WS-25
Kind of boiler	Watery, flowing, forced circulation
Kind of hearth	Grate
Thermal power [MWt]	25 MWt
Water flow through the boiler [m ³ /h]	250 ÷ 600
Work pressure [MPa]	2.0
Temperature of water on the power supply [°C]	155
Efficiency [%]	85

Kortowo BIO Production Parameters:

Net heat production	490 000 GJ/a
Work time	5 500 h/a
Chip consumption (average calorific value 10.5	54 900 Mg/a

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Emissions to the atmosphere	
a. dust	5,9 Mg/a
b. SO ₂	16,4 Mg/a
c. NO _x	59,1 Mg/a
d. CO	131,3 Mg/a
Quantities of furnace waste	164,8 Mg/a
The electricity consumption of own needs	2 240 MWh/a

MPEC, in accordance with the public procurement law, has already carried out an open tender for the selection of the contractor of Kortowo BIO, as a result of which the most advantageous bid was submitted by the company Energomontaż Zachód Wrocław spółka z o.o. with its registered seat in Warsaw. In the middle of December 2017 MPEC will sign an agreement with the above contractor to design and construct Kortowo BIO.

The value of the remuneration of Energomontaż West Wrocław spółka z o.o. will amount to 42 914 175 PLN net (52 784 435,25 PLN gross).

According to the timetable set out by the contractor:

- building permit for Kortowo BIO will take place on 30 April 2018,
- start-up - 31 January 2019,
- commissioning - 31 March 2019.

Investment outlays will be financed by MPEC from the following sources:

- **European Union subsidy up to the amount of PLN 21 644 400**

On 9 November 2017, MPEC and the National Fund for Environmental Protection and Water Management concluded an agreement for financing the construction of Kortowo BIO with a subsidy to the amount of 21 644 400 PLN. The subsidy was granted after the National Fund for Environmental Protection and Water Management conducted the Contest No. POIS/1.1.1/1/2016 within the *Measure 1.1 Supporting the generation and distribution of renewable energy, Submeasure 1.1.1 Support for investments related to the generation of energy from renewable sources, including the connection of these sources to the distribution/transmission network* within the framework of the Operational Programme Infrastructure and Environment for the years 2014 – 2020.

- **credit or loan**

MPEC finalizes the talks for debt financing for the construction of Kortowo BIO. MPEC obtained a financial offer (credit) from Bank Gospodarstwa Krajowego, as well as a loan offer from the National Fund for Environmental Protection and Water Management. Currently MPEC is comparing both offers in detail, in the coming weeks it is planned to sign an agreement with the entity whose offer will be considered as the most advantageous.

1.3.3. Energy-efficient heating system and fuel mix

Energy Regulatory Act of 20 May 2016 (Journal of Laws of 2016, item 831), implementing the Directive 2012/27/EU of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC introduced to the Polish law the term of the so-called “energy-efficient heating system”. Art. 43 subparagraph 2 point c of the Energy Regulatory Act added Art. 7b paragraph 4 to the Energy Law with the following wording:

“By an energy-efficient heating or cooling system, a heating or cooling system is understood whereby it is used at least:

- 1) 50% energy from renewable energy sources or*
- 2) 50% waste heat, or*
- 3) 75% heat from cogeneration, or*
- 4) 50% combination of energy and heat, referred to in paragraphs 1-3”.*

Recognizing the Municipal Heating Network in Olsztyn as an energy-efficient heating system within the meaning of Article 7b paragraph 4 of the Energy Law presents numerous benefits. Obtaining the status of an efficient heating system gives priority to the heat supply of consumers connected to the Municipal Heating Network. According to the provisions of Article 7b paragraph 1 of the Energy Law **there is an obligation to prioritize the connection of objects of the power above 50 kW to an efficient energy system, which will allow for increasing the number of entities connected to the Municipal Heating Network.**

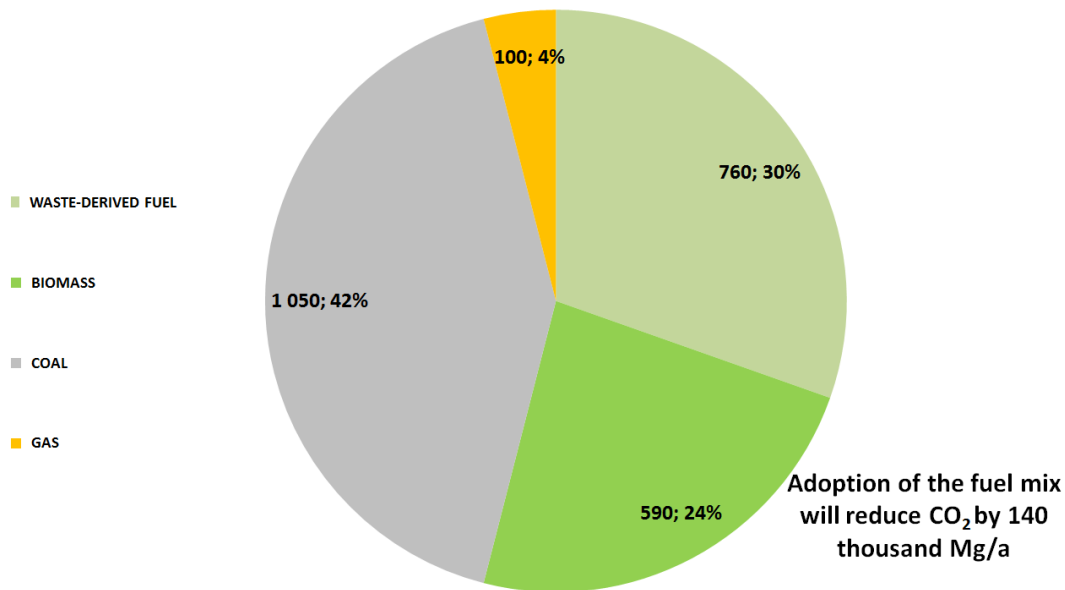
Implementation of the Incineration Plant by the Private Partner along with the investment which is being performed by MPEC consisting in the construction of Kortowo BIO will allow for the Municipal Heating Network to comply with the requirement of an efficient heating system by supplying 50% of heat from the so-called green energy sources (waste, biomass), in accordance with the requirements set out in the Art. 7b paragraph 4 of the Energy Law.

Both the Incineration Plant and Kortowo BIO will have the status of an RSE installation within the meaning of the Act of 20 February 2015 on renewable energy sources (i.e. consolidated text Journal of Laws of 2017, item 1148) (hereinafter referred to as **“Act on RSE”**).

It should be noted that, according to Article 116 sec. 1 of the Act on RSE, a company selling heat to final customers (via a network or directly from a source of heat) is obliged to purchase heat **offered from the waste thermal treatment plants and from RES** other than waste thermal treatment plants in the amount not higher than the needs of the customers of this company, connected to the network. Detailed rules for the implementation of this obligation are laid down in the Ordinance of the Minister of Energy of 18 May 2017 on the detailed scope of the obligation and technical conditions for the purchase of heat from renewable energy sources and the conditions for connecting installations to the network (Journal of Laws of 2017, item 1084). The obligation to purchase heat is executed on the basis of a heat sales contract, **for the purposes of determining the actual heat required to be purchased, the indication of the measurement and clearing system** specified in that contract **shall be adopted**. The purchase is made **first of all** before purchase from other sources that are not Incineration Plant or RES.

As a result of the implementation of all the planned investments related to the construction of new heat sources and modernization of the Heat Plant Kortowo, diversification of fuels used for heat production in Olsztyn and reduction of production from fossil fuels will follow. The projected share of particular fuels in heat production (in %) for the needs of the customers connected to the Municipal Heating Network is shown in the scheme presented below.

Efficient heating system – Olsztyn fuel mix



Source: own study

1.4. Characteristics of waste management system in the Voivodeship

Until recently, the dominant way of municipal waste management was its storage. According to GUS data, in Poland in 2012 9,580.9 thousand tons of municipal waste was collected, out of which up to 7,158.2 thousand tons (74.7%) were managed by storing them on landfills. (*"Infrastruktura komunalna w 2012 r."* https://stat.gov.pl/files/gfx/portalinformacyjny/pl/defaultaktualnosci/5492/3/10/2/ik_infrastruktura_komunalna_2012.pdf). In the subsequent years, the mass of waste in percent stored on landfills was gradually decreasing in relation to the mass of collected waste. In 2014, 10,330.4 thousand tons of municipal waste were collected in Poland, out of which 5,436.9 thousand tons (52.6% of the total collected waste) were dedicated for storage (*"Infrastruktura komunalna w 2014 r."* <https://stat.gov.pl/obszary-tematyczne/infrastruktura-komunalna-nieruchomosci/nieruchomosci-budynki-infrastruktura-komunalna/infrastruktura-komunalna-w-2014-r-3,12.html>).

In order to further limit the mass of waste stored on landfills, in the recent years at European Union level a number of restrictions in terms of waste management has been introduced in the Member States, including the required levels of waste recovery and recycling. Furthermore, significant limitations in terms of the contribution of biodegradable fractions deposited on landfills (municipal tasks) have been introduced. In accordance with the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions "Towards a circular economy, a zero waste programme for Europe" of 2.12.2015 (<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52015DC0614>), it is also provided that, among others:

- from 2025 no recyclable waste is allowed to be stored,
- from 2050 no waste at all is allowed to be stored.

Restrictions in terms of waste storage were also introduced in the Polish provisions of law. In Article 3c, paragraph 1 of the Act of 13 September 1996 on the maintenance of cleanliness and order in municipalities (i.e. Journal of Laws 2017, item 1289) the municipalities were obliged to limit the mass of biodegradable municipal waste disposed of for landfilling:

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- 1) until 16 July 2013 - to no more than 50% of the total mass of biodegradable municipal waste disposed of for landfilling,
 - 2) until 16 July 2020 - to no more than 35% of the total mass of biodegradable municipal waste disposed of for landfilling
- in relation to the mass of waste produced in 1995.

Furthermore, the Act on the maintenance of cleanliness and order in municipalities imposed obligations on municipalities related to the required level of recycling, as well as preparation for reuse and recovery by other methods. In accordance with Article 3b, paragraph 1 of the aforementioned Act, until 31 December 2020 the municipalities are required to achieve:

- 1) the level of recycling and preparation for reuse of at least 50% by weight of the following fractions of municipal waste: paper, metal, plastics and glass;
- 2) the level of recycling and preparation for reuse and recovery by other methods of at least 70% by weight of other than non-hazardous construction and demolition waste constituting a part of municipal waste.

The path to achieving the aforementioned levels of recycling was provided in the Annex No. 1 to the Ordinance of the Minister of the Environment of 14 December 2016 on the levels of recycling, preparation for reuse and recovery by other methods of fractions of municipal waste. (Journal of Laws 2016, item 2167). The tables presented below show the levels of recycling which should be achieved by the municipalities in particular years from 2012 to 2020.

	Rate of recycling and preparation for re-use [%]								
	2012 r.	2013 r.	2014 r.	2015 r.	2016 r.	2017 r.	2018 r.	2019 r.	2020 r.
Paper, metal, plastics, glass	10	12	14	16	18	20	30	40	50

	Rate of recycling, preparation for re-use and recovery based on other methods [%]								
	2012 r.	2013 r.	2014 r.	2015 r.	2016 r.	2017 r.	2018 r.	2019 r.	2020 r.
Construction and demolition waste other than dangerous	30	36	38	40	42	45	50	60	70

A municipality which does not meet the obligations related to the required level of recycling, preparation for reuse and recovery by other methods, and the reduction of biodegradable municipal waste disposed of for landfilling is subject to a financial penalty calculated separately for the required level of recycling, preparation for reuse and recovery by other methods, and the reduction of biodegradable municipal wastes disposed of for landfilling.

In turn, according to the Regulation of the Minister of Economy of 16 July 2015 on the admission of waste to storage in landfills (Journal of Laws 2015, item 1277), from 1 January 2016 it is prohibited to store some of the waste with a burning heat of more than 6 MJ/kg. The prohibition to store on landfills include, among others, mixed municipal waste (20 03 01) and other waste (including mixtures of materials) from mechanical treatment of waste (19 12 12). Furthermore, on the basis of the Regulation of the Council of Ministers of 6 March 2017 amending the Regulation on fees for using the environment, new, increased unit rates of fees for storing waste on landfills were introduced. According to new fees, the fee for storing 1 ton of 20 03 01, 19 12 10 and 19 12 12 waste on landfills will amount to PLN 140 in 2018, PLN 170 in 2020 and PLN 270 in 2020 respectively. Currently the fees for storing waste on landfills amount to PLN 120.76 for 20 03 01 and 19 12 10 waste, while the fee for 19 12 12 waste amounts to PLN 74.26. This means significant increase in environmental fees related to waste storage, which is supposed to limit the storage only to the waste which cannot be used in another way. Increasing the environmental fees aims at causing that the waste management other than storage is more

financially beneficial. The introduction of the aforementioned provisions of law resulted in a tangible effect in the form of reduction in storage of municipal waste on landfills. According to GUS data for the year 2016, a total of 4,406.6 tons of waste were destined for disposal operations, out of which 4,254.7 tons of waste (36.5% of the total collected waste) were destined for storage, while 151.9 thousand tons of waste (1.3% of the total collected waste) – for disposal by thermal conversion without energy recovery. In comparison with 2015, where the waste stored on landfills constituted 44.3% of the total collected municipal waste (4,808.0 thousand tons), a significant decrease of the share of municipal waste destined for disposal by storage was observed (*"Infrastruktura komunalna w 2016 r."* <http://stat.gov.pl/obszary-tematyczne/infrastruktura-komunalna/nieruchomosci/nieruchomosci-budynki-infrastruktura-komunalna/infrastruktura-komunalna-w-2016-r-3,14.html>).

In order to meet the waste management requirements, in the Warmińsko-Mazurskie Voivodeship 7 waste management plants with waste sorting lines and biodegradable waste compost plants were installed, including the ZGOK's plant. **The Incineration Plant in Olsztyn is dedicated to the whole stream of combustible fraction of municipal waste remaining after the selection of secondary raw materials. The Incineration Plant will incinerate about 100 thousand tons of municipal waste after the MBP process per year, which will allow closure of the waste management system through its thermal conversion.**

On December 28, 2016, the Regional Council of Warmińsko-Mazurskie Voivodeship adopted resolution No. XXIII/523/16 on approval of the new WPGO for Warmińsko-Mazurskie Voivodeship for 2016-2022 and the Investment Plan being an attachment to the WPGO and an executive resolution on the implementation of the WPGO for the years 2016-2022, which became final on 3 February 2017. The new WPGO maintains the division of the Voivodeship into five regions of municipal waste management. The division into regions (visible in different colours) is shown on the map below:

Division of the Voivodeship into waste management regions



Source: WPGO for the years 2016-2022

Within the Voivodeship's waste management system, particular RIPOKs and ZGOKs will produce in their installations, among others, fractions which can be a fuel for the Installation in Olsztyn, i.e. RDF or pre-RDF and fraction 20-80 mm after composting and sieving. At the current stage it is not assumed to burn the fraction 0-80 mm in Olsztyn, but if the costs related to the stabilization of this kind of waste were too high, the installation of waste thermal conversion in Olsztyn could take over a part of those wastes' stream.

1.5. Characteristics of plants functioning within the waste management system in the Warmińsko-Mazurskie Voivodeship

Zakład Utylizacji Odpadów sp. z o. o. with registered office in Elbląg was established by the Founding Act of the limited liability company as a result of the implementation of the Resolution of the City Council in Elbląg No. XVII/388/2004 of 9 September 2004 on the transformation from the budget entity Zakład Utylizacji Odpadów in Elbląg into sole limited liability company from the date of 1 October 2004. Zakład Utylizacji Odpadów spółka z ograniczoną odpowiedzialnością in Elbląg was entered into the Register of Entrepreneurs of the National Court Register maintained by the District Court in Olsztyn – VIII Economic Division of the National Court Register under KRS number: 0000225449. Basic activity of Zakładu Utylizacji Odpadów sp. z o. o. in Elbląg consists in acceptance of mixed waste and segregated waste for treatment, storage of inert waste, separate collection of packaging waste, disposal of large-scale waste, management of construction waste, management of recovered recyclable materials and energy, temporary collection of hazardous waste of municipal type.

Ekologiczny Związek Gmin "Działdowszczyzna" was established in 1997 by virtue of the Resolutions of the five municipal councils and was registered on 24 February 1998 in the register of inter-municipal unions by the Ministry of Interior under the number 176. The union operates under the Act of 8 March 1990 on municipal government (i.e. Journal of Laws 2017. item 1875) and the Statute of the Union, which entered into force on 12 March 1998, i.e. on the day of its announcement in the Official Journal of the Ciechanów Province of 12 March 1998 No. 6, item 23-27. The members of the Union are the municipalities of the Działdowo District, Nidzica District and parts of Iława and Nowe Miasto Districts. At present its members are: Municipality of Działdowo, Urban-Rural Municipality of Lidzbark, Municipality of Lubawa, Municipality of Nidzica and communities of: Działdowo, Iłowo - Osada, Płońnica, Rybno, Kozłowo, Janowiec Kościelny, Janowo, Grodziczno. The union operates in an area of 2100 km², which is inhabited by 120 thousand residents. It implements ecology and environmental protection with the use of own resources and acquired external funds. The goals of the union are: the integration of municipalities of the Union for the protection of the environment and nature, ecological development and ecological education of the society, water management, recreation and tourism and the prevention of animal homelessness on the rules set out in the regulations on animal protection and supporting the implementation of own the tasks of the Unions' participants in terms of environmental protection, nature conservation, municipal and water management, and recreation and tourism, in particular through running joint activities related to the construction and operation of plants for the storage and disposal of dead animals, municipal waste, places for the prevention of animal homelessness, the organization of a selective waste collection system and protection against water degradation.

Zakład Unieszkodliwiania Odpadów Komunalnych RUDNO Sp. z o.o. - In 2008 the Assembly of the Municipalities of Ostródzko-Iławski Region Union "Clean Environment" established a limited liability company in order to manage and run the business of the Municipal Waste Disposal Plant in Rudno near Ostróda and to conduct municipal waste management in the area of the Union. The owner of the Municipal Waste Disposal Plant RUDNO Sp. z o.o. is the Union of Municipalities "Clean Environment", which took up 100% of its shares. The business object of the Company is: collection of non-hazardous waste, collection of hazardous waste, processing and disposal of non-hazardous waste, treatment and disposal of hazardous waste, disassembling of waste products, recovery of raw materials from segregated materials, reclamation activities and other services related to waste management, wholesale of waste and scrap.

NOVAGO Sp. z o.o. (RÓŻANKI) - NOVAGO has been operating in the waste treatment industry sector since 1992 and since that time for 23 years it has been known as Zakład Usług Komunalnych USKOM Sp. z o.o. In 2003, Mr. Janusz Arent became the majority shareholder, another breakthrough moment was 2012 when NOVAGO acquired a strategic investor – Abris Capital Partners. Since then the Company has been investing in the development of technology and its plants meet restricted EU standards. NOVAGO is the leader in municipal waste treatment and the largest alternative fuel producer in Poland. NOVAGO specializes in modern municipal waste management. According to the information of NOVAGO on its website "*Technologically advanced,*

innovative installations in the company's 6 plants allowed for the treatment of 1,000,000 thousand tons of waste in 2016. The company is also the largest producer of Refused Derived Fuel generated from municipal waste. The production capacity of NOVAGO plants is 300 thousand tons of RDF per year and the recipients of the fuel are cement plants”¹. The plant in Różanki has been in operation since 2012 and includes the installation of mechanical-biological waste treatment (MBP), bioreactor and municipal landfill.

Zakład Unieszkodliwiania Odpadów Komunalnych Spytkowo Spółka z ograniczoną odpowiedzialnością was established by the Masuria Inter-Commune Union - Waste Management on 7 December 2009 in order to provide public services in the sector of waste management within the own tasks of the communities belonging to the union. ZUOK Spytkowo is a RIPOK – Regional Installation of Treatment of Municipal Wastes. The plant receives waste from the area of 12 municipalities from the Warmińsko-Mazurskie Voivodeship (municipality Banie Mazurskie, municipality Budry, municipality and the city of Giżycko, municipality Kruklanki, municipality Miłki, municipality and the city of Orzysz, municipality Pozezdrze, municipality and the city of Ryn, municipality Srokowo, municipality and the city of Węgorzewo and municipality Wydminy). The plant employs about 50 people. The capacity of the sorting line of mixed municipal waste is 40,000 Mg/year/1 shift, the capacity of the sorting line of selectively collected waste materials is 7,320 Mg/year/1 shift, the capacity of the composting plant is 16,500 Mg/year, the capacity of the large waste treatment device is 74,5 Mg/year/1 shift.

Zakład Gospodarki Odpadami Komunalnymi Sp. z o.o. in Olsztyn, in brief ZGOK, is a communal company of commercial law, in which 100% of shares belong to 37 municipal-governments. The basic business object is only the organization of the waste disposal system within the area of its Shareholders and its further operation. Zakład Gospodarki Odpadami Komunalnymi Sp. z o.o. accepts waste from 37 municipalities (Central Region of the Warmińsko-Mazurskie Voivodeship) on the basis of an executive contract signed with all the municipalities of the Central Region and on the basis of individual contracts (24 contracts at 30.06.2016) signed with recipients of waste from uninhabited property areas in the Central Region.

ZGOK finished the implementation of the project: “Municipal waste management system in Olsztyn. Construction of the Waste Disposal Plant” in the last quarter of 2015. Thanks to this project the mechanical-biological waste process plant was designed and constructed, targeted at the recovery of raw materials and the production of alternative fuels from adequate quality waste and minimizing the amount of generated ballast. The plant is located in the Olsztyn Track – East district in the area 4.5 hectares, between Lubelska Street and M. Zientary-Malewskiej Street. The plant is equipped with two professional technological lines.

The line for receiving waste from selective collection was not used in full capacity in 2016, which is **a sign of the still too low ecological awareness of the inhabitants and the necessary further organizational actions that should be undertaken at the level of the municipalities in the region to intensify selective waste collection.**

The line for mixed municipal waste treatment was originally designed for a capacity of 95 thousand Mg/year. However, as a result of the system sealing, in 2016 there was an increased amount of mixed waste delivered to the plant, which exceeded **130 thousand Mg**. This situation forced the necessity of taking actions to ensure the management of more mixed municipal waste. Organizational and technological changes have been implemented which have increased the maximum annual capacity of plant to **125 thousand Mg/year**. Three-shift work system was applied and changes in bio-drying parameters were introduced. This change was included into the updated Integrated Permit in November 2016.

¹ <http://www.novago.pl/article/novago>

The final products of the mixed waste treatment in ZGOK are alternative fuels from waste, secondary raw materials and post-processing ballast (directed to the landfill). In 2016 ZGOK produced a total of over **90 thousand Mg of RDF waste** of 19 12 10 code.

The organization of the wastes management system in the central region based on the WPGO adopted in December 2016 **aims to promote the process of selective collection at source, which is the most effective way to achieve high levels of recycling. In order to motivate the municipalities to promote and increase the acquisition of raw materials, ZGOK only collects a symbolic fee of PLN 1 for receiving waste from selective collection.** It should be noted that most of the waste coming from selective collection require very deep cleaning on a special sorting line and only a part of it can finally be recycled. This approach to settlement with municipalities is very beneficial and competitive, which in the coming years should lead to an adequate increase in recycling in the region. At the same time with the increase of the level of selective collection, the amount of energy produced from RDF will also be gradually reduced. This is not in contradiction with the objectives of the project for the construction of an Incineration Plant in Olsztyn, because ZGOK, in accordance with the agreement signed with MPEC, guarantees deliveries of waste to the Incineration Plant at the level of 45 thousand Mg per year and the other stream will be supplied from other RIPOKs in the Voivodeship.

2. The material scope of the PPP Project

2.1. Construction of the Installation, timetable

Taking into account the needs in the field of waste management and conditions of the heating system in Olsztyn, the Project's scope will include the construction of a new thermal waste treatment installation (the Incineration Plant) and a Peak Load Boiler at Lubelska Street, whereas the installations are jointly referred to as the Installation.

As part of the construction of the Installation, the following will be constructed, among others:

- Incineration Plant CHP block of thermal power of around 28-32 MWt (the exact power of the Incineration Plant will depend on the choice of particular devices and technology which will be applied by the Private Partner) and the electric power of around 11 MWe, supplied with a combustible fraction of municipal waste remaining after the separation of secondary raw materials,
- waste reception and delivery systems,
- combustion by-product managing systems,
- group of connections (district heating, power, gas, water and sewage)
- 60-65 MWt gas-oil Peak Load Boiler.

The technical solutions adopted for the Incineration Plant are based on the technology of the **grate boiler** which burns **about 100 thousand tons of combustible fraction of municipal waste** annually with an average calorific value of **about 12.5 MJ/kg**. The boiler work area is between 10 and 16 MJ/kg, so it is a solution dedicated to previously treated high-calorific municipal waste generated by the segregation of waste from the stream of raw materials and ballast. This is due to the declared structure of the waste stream available within the voivodeship, defined on the basis of the agreement concluded between MPEC and the producers of the energy fraction of municipal waste (ZGOK and other RIPOKs of the Warmińsko-Mazurskie Voivodeship). The Installation is dedicated to the stream of processed waste from the region of the voivodeship and **will not burn mixed municipal waste**. This option is also excluded by a local spatial development plan for the site on which the Installation will be built.

The construction of the new Installation is planned for 2018-2022. The Project's implementation timetable has been presented in the form of a tabular task time table, divided into squares, foreseeing realisation of all the substantial tasks.

Simplified Project's timetable

Specification	2018				2019				2020				2021				2022
(objects, activities, works)	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I
Developing construction design for the building permit																	
Design of the Installation (including the temporary building permit obtained by the Private Partner)																	
Construction of the Incineration Plant (36 months)																	
Construction of the Peak Load Boiler (18 months)																	
Connections																	
Contract's engineer – construction of the Installation																	
Promotion of the Project																	

The design and construction of the Installation will be carried out by a private partner in accordance with the PPP Agreement.

On the basis of the PPP Agreement, the Private Partner will be obliged to design the Installation, obtain the required administrative decisions, supply the materials and devices, perform construction works, assembly, commissioning, regulatory traffic, trial movement, staff training, data collection, application development and to obtain integrated permit and water permit for waste water discharge and obtaining permissions to use and commissioning.

Proposed technical solutions should ensure maximum energy recovery from waste. The Installation will produce combined heat and power – in highly efficient cogeneration. The amount of post-process waste generated in the thermal treatment process should be limited to a minimum. The post-process waste should be recycled and/or safely disposed of.

In terms of environmental impact the Incineration Plant and Peak Load Boiler will meet the requirements of national and European Union regulations, as well as will meet the requirements, rules and standards set by the Best Available Techniques (BAT), as well as detailed requirements specified in the Terms of Reference and in the environmental decision conditions of investment implementation.

In order to reduce the emissions of harmful substances to the atmosphere in the boiler of the Incineration Plant installations for the removal of harmful emissions from the exhausts will be installed. The requirements of EU and Polish law for the emission of pollutants (e.g. SO₂, NO_x, dust) into the atmosphere from waste incineration plants are much more restrictive than those required for conventional fuel (coal, oil, gas) sources. In addition, as far as sources of fossil fuels are concerned, mainly the emission of dust, sulphur dioxide and nitrogen oxides, the emission of organic compounds, acidic compounds, carbon monoxide, dioxins, furans and heavy metals is additionally limited for waste incineration.

The technology of burning waste in grate boilers is the most common technology in Europe and in the world. This is a technically proven solution and can be offered by many suppliers while meeting the latest requirements of the best available techniques and technologies (BAT). Due to the considerable variability of the waste fuel available on the territory of the voivodeship, other available technologies, including fluidized bed boilers, were rejected, the use of which would require additionally fitting the installation with a waste standardization station.

2.2. Received licenses and required permits for the Project realization

The implementation of the Project has obtained a number of licenses and permits and it has been included in planning documents of national significance.

Above all, the Project was included in the "Low Carbon Economy Plan for Olsztyn" adopted by the City Council in Resolution No. X/110/15 of 27 May 2015. Prior to the acceptance of the document, a public consultation on this document took place on 17-31 March 2015. Between 21 April and 11 May 2015, a "Low Carbon Economy Plan for the City of Olsztyn" has been available for public inspection, together with an environmental impact forecast.

The Project was also included in **the update of the "Assumptions to the heat, electricity and gas fuel supply plan" adopted by the City Council of Olsztyn with the Resolution No. XII/152/15 of 26 August 2015**. From 27 July to 17 August 2015 an Update of "Assumptions to the plan of supply of heat, electricity and gas fuel of the City of Olsztyn" was available for public inspection, together with the forecast of environmental impact.

The construction of the new Incineration Plant was provided for in **WPGO** adopted by the Voivodeship Council of Warmińsko-Mazurskie Voivodeship on 28 December 2016 and in **the investment plan, agreed with the Minister of the Environment, being an appendix to WPGO**. Before its adoption, WPGO was made public, along with the possibility for presentation of observations and applications; moreover, a public debate on WPGO project took place.

In order to implement the Project, MPEC has obtained the required Connection Conditions and has entered into the necessary connection agreements:

- a) Gas Connection Agreement of 25.02.2016 on connection to the gas network with PSG Sp. z o.o.,
- b) Agreement with Energa-Operator S.A. of 31.03.2016 on connection to the power grid,
- c) Technical conditions for design of the connection to the sanitary sewerage system issued by PWiK spółka z o.o. with its registered seat in Olsztyn for the benefit of MPEC on 11.06.2015 (the 200-metre-long sewerage connection will be constructed by MPEC; a draft agreement has been prepared),
- d) Agreement with PWiK sp. z o.o. of 04.08.2015 on the connection to the water supply network.

MPEC has also developed a technical design for connection to the district heating network and two draft contracts for the connection to the district heating network – for the Incineration Plant and the Peak Load Boiler. These agreements will be concluded between MPEC and Private Partner.

MPEC also obtained a final decision on the environmental conditions of the project consisting in the construction of a thermal combustion plant conversion facility resulting from the treatment of municipal waste together with the accompanying infrastructure in Olsztyn at Lubelska Street. It should be noted that despite challenging the decision to the court, the environmental decision has been maintained in force and can provide ground to the implementation of the Installation.

In order to accelerate the works on the Project, MPEC has also prepared a tender for the preparation of the project documentation and obtaining **building permit** for the Incineration Plant and the Peak Load Boiler at Lubelska Street. It is planned that the building permit will be issued by the City of Olsztyn in August 2018. MPEC will transfer the obtained building permit to the Private Partner and the Private Partner will be required to verify the correctness of the adopted technical solution and to obtain a potential temporary permit, if it is

considered to be necessary. The Private Partner shall bear full responsibility for construction design and all documentation on which the construction is based.

Moreover, The Private Partner will be required to obtain all the missing permits, licenses and permissions, as well as to perform construction documentation, particularly to obtain the temporary permit if necessary, integrated permit, permission to use the Installation, emission permit for the Peak Load Boiler. After completing the Installation, the Private Partner will be required to obtain concession for heat and electricity generation and for conducting business activity with the use of the Installation.

The Private Partner shall ensure that there are no grounds or threats to abrogate the abovementioned licenses and concessions. The risk of abrogation or change of licenses or concessions will be charged to the Private Partner.

2.3. Location of the Installation

Land selection for the investment was made on the basis of careful analyses of potential locations in terms of distance from the ZGOK plant, access to the Installation site, possibilities of water supply, sewerage, gas, heating, electricity supply and the possibility of introducing power into the power system.

The investment site is located in the eastern part of Olsztyn, south of Lubelska Street. This area is limited by railway tracks from the west, access road to the Michelin Polska Logistics Center from the east and south and the area designated for the Olsztyn ring road (marked on the local spatial development plan with the symbol KG50 (2x2) from the north).

Plot at Lubelska Street is an undeveloped area with the exception of the western part bordering with the railway siding, where overhead power lines 110 and MV run along the tracks. Along the north-western boundary of the plot there is a gas network of average pressure between siding and overhead power lines. The medium pressure gas network runs also along the south-western border of the plot.

The location of the investment is covered by the local spatial development plan of the area located between the railway siding, Lubelska Street and the border of the Olsztyn City called "Industrial District - East 4" approved by the City Council Resolution No. LIII/866/14 dated 28.05.2014. **According to the plan, the area designated for the investment is designated with a 1CEO symbol and is intended for a heating plant or a heat generating installation for district heating, with the option to produce electricity in cogeneration**, along with the necessary technical infrastructure networks and equipment. In addition, the designated area may be used for an **incinerator or waste co-incineration plant with heat recovery for the needs of the urban heating and the possibility of generating electricity in cogeneration**. The vast majority of the area is designated for industrial, component and service buildings (2PS at MOZP), while the northern part, at the boundary of the site, for technical infrastructure.

Location of the planned Investment with initial visualization



Source: MPEC's own materials

Ground conditions have been identified in the "Geotechnical Opinion on suitability for the development of areas located at Lubelska Street in Olsztyn", dated July 2010, prepared by Przedsiębiorstwo Techniczno-Usługowe "Geoprojekt – Olsztyn" sp. z o.o. During the course of the investigation, MPEC commissioned GEOPROJEKT to conduct ground surveys along with a geotechnical opinion on the basis of well grid agreed with Private Partners. In the first quarter of 2015, the survey was re-performed with the indication of the well grid in accordance with the location of the building and equipment of the planned Installation as indicated in the feasibility study by the MPEC technical advisor. Research has shown that the terrain is diverse in terms of groundwater conditions and altitude.

Furthermore, MPEC carried out twice archaeological survey of the real estate at Lubelska Street, in accordance with the scope set out in the Decision No. 471/2016 of the Warmia and Mazury Monument Conservator of 29 December 2016. As follows from the exploratory archaeological survey carried out in Olsztyn on site CX (42 on the Polish Archaeological Record area 24-62) and CXI (43 on the Polish Archaeological Record area 24-62) within the 1 a - 1 b excavations (plots 6/15 and 6/16, section 94), carried out on 28 - 30 March 2017, performed by mgr Adam Mackiewicz, the two performed segments of the excavations and the carried out archaeological survey did not confirm the presence of archaeological sites in the form of traces of settlements, archaeological monuments, archaeological features or cultural layers. In relation to the conclusions of the aforementioned document, the PPP Agreement will include basic provisions related to the risk of archaeological finds.

2.4. Impact of the Project on natural environment

The Project will generate a number of ecological benefits. The most important include:

- generation of approximately 75 MWh of electricity (net volume) in high-efficiency combined with heat production without the use of fossil fuels;
- development of about 100 thousand tons of municipal waste per year, with minimal impact on the environment;
- avoiding emission of about 99 755 Mg per year of carbon dioxide (in the equivalent power plant).

Despite the environmentally profitable nature of the Project, its environmental impact cannot be completely avoided. Nevertheless, the adopted technological solutions will allow to decrease the negative impact on the environment to a minimum. **Thanks to them, the Installation will meet both the emission standards set by the national law and the limits set out in the BAT reference documents.**

The environmental impact assessment of the project (EIA) included preparation of an environmental impact report (full report), providing a basis for the President of the City of Olsztyn to issue a decision establishing environmental conditions for implementation of the Project consisting in the construction of the installation of thermal treatment of the energy fraction from the processing of municipal waste along with the accompanying infrastructure in Olsztyn at Lubelska Street. MPEC has obtained a final and binding environmental decision of 22 December 2015 No. Sd.6220.15.2015.MJ (decision on the environmental conditions of the undertaking consisting in the construction of the thermal conversion of the combustible fraction resulting from the treatment of municipal waste together with the accompanying infrastructure in Olsztyn at Lubelska Street).

3. Legal framework of the PPP Project realisation

3.1. Legal and regulatory aspects

According to Article 2 paragraph 1 of the Act on municipal economy, in connection with Article 7, paragraph 1, point 3 of the Act of 8 March 1990 on municipal government, MPEC performs public tasks of the Olsztyn Municipality in the field of heat supply. In addition, according to § 9 of the memorandum of association, the subject of MPEC's activities also includes *"the collection of non-hazardous waste (...), the processing and disposal of waste (...), the treatment and disposal of non-hazardous waste"*.

Provincial Waste Management Plan (WPGO)

In order to implement the requirements of the Act of 27 April 2001 on waste (Journal of Laws of 2010, No. 185, item 1243, as amended), replaced by the Act of 14 December 2012 on waste (Journal of Laws of 2016, item 1987, hereinafter referred to as the **"new waste law"**) the parliament of Warmińsko-Mazurskie Voivodeship adopted a resolution No. XVIII/333/12 of 19 June 2012 on the adoption of a waste management plan for the Warmińsko-Mazurskie Voivodeship for 2011-2016. In accordance with the legal requirements in this plan, the voivodeship municipal waste management regions were identified in the voivodeship and regional waste treatment installations (RIPOK), owned and operated by municipal companies (including ZGOK) or inter-municipal union.

On 28 December 2016, the Regional Parliament of Warmińsko-Mazurskie Voivodeship adopted Resolution No. XXIII/523/16 on the adoption of the new WPGO for 2016-2022 and the Investment Plan annexed to the WPGO. The implementing resolution on implementation of the WPGO for 2016-2022 became legally binding on 3 February 2017. The new WPGO maintained the division of the voivodeship into five waste management regions.

WPGO highlighted the problem of a very high percentage of waste with the code 19 12 12 resulting from the treatment of mixed municipal waste in MBP installations, and at the same time *"the lack of installations processing the energy fraction of municipal waste generated in installations of mechanical and biological treatment of municipal waste"*. The new WPGO clearly stated that *"in the Warmińsko-Mazurskie Voivodeship there will be an installation for the thermal conversion of waste from municipal waste processing, which will be carried out on its own or in a special purpose vehicle by Miejskie Przedsiębiorstwo Energetyki Ciepłej Sp. z o.o. in Olsztyn. The installation will be located in Olsztyn, in the Industrial District – East 4 at Lubelska Street. The installation will burn waste with code 19 12 12 – other waste from mechanical treatment of waste and 19 12 10 – combustible waste (alternative fuel), generated in all regions of the voivodeship and will close the municipal waste management system."* The investment consisting in the construction of the thermal waste conversion plant in Olsztyn was also included in the investment plan, annexed to the WPGO for 2016-2022.

The Installation is part of the closed waste cycle – **circular economy** (adopted by the European Commission in the framework of the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions *"Towards a circular*

economy, a zero waste programme for Europe” of 2.12.2015 (the so-called “Circular Economy”) (<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52015DC0614>), and its functioning complements the waste management chain **in accordance with the hierarchy of waste management**.

Both of these models emphasize waste prevention, selection of waste at source, selective waste collection, raw material and material recovery, **and energy recovery**. All these elements of the system are designed to eliminate waste disposal to the highest possible level. Whereas the objectives to be achieved are set out in the National Waste Management Plan.

Regulated activity (tariff)

The Private Partner, as an energy company, will conduct business activities licensed in the field of electricity and heat production. The heat produced in the Private Partner’s own sources, i.e. the Incineration Plant and Peak Load Boiler, will be sold to MPEC at a tariff price. According to Article 45, paragraph 1 of the Energy Law of April 10, 1997, energy companies set energy tariffs, including heat, according to the scope of business activity subject to licensing. In Article 32, paragraph 1, point 1 of the Energy Law, one of such activities is the generation and trade of heat. Detailed rules for shaping and calculation of tariffs were laid down in the Ordinance of the Minister of Economy of 22 September 2017 on detailed rules for shaping and calculation of tariffs and settlements for heat supply (Journal of Laws of 2017, item 1988), issued on the basis of Article. 46 sec. 5 and 6 of the Energy Law.

Heat tariff is subject to the acceptance of the President of the Energy Regulatory Office (hereinafter referred to as “**President of ERO**”). According to Article 45, paragraph 1 of the Energy Law, heat tariffs shall be calculated in a way which ensures covering the justified costs of the company’s business activity in the field of heat generation or trade, along with justified return on equity invested in this activity.

Provisions of law foresee two heat tariff calculation methods:

- cost,
- simplified (benchmark).

The heat tariff for the Peak Load Boiler will be calculated in the traditional cost method, while the one for the Incineration Plant – on the basis of benchmark. The simplified method can be used only by the units operating in cogeneration, independently of the fuel consumed in a cogeneration unit. At the same time, applying the simplified method to calculate the tariff is a right and not obligation of the heat producer. Therefore, in the case when the benchmark price does not cover the justified costs of the business activity along with the justified return on equity, the Private Partner shall have the right to apply to the President of ERO to accept the heat tariff determined with the cost method.

When applying the benchmark method, the heat price adopted by an energy company is determined by comparison to the average sales price of the heat generated in non-cogeneration units, in which the same fuel as in the given cogeneration unit is used. For Incineration Plant the RES installation benchmark is adopted. The average heat price, according to Article 23 paragraph 2 point 18 letter c of the Energy Law, is determined by the President of ERO (§ 13 sec. 2 and 4 of the tariff regulation).

Average heat prices (single component) in non-cogeneration units, being RES installations, according to the communications of the President of ERO (PLN/GJ) in the recent years:

Average heat prices (single component) in non-cogeneration units (PLN/GJ)

	2011	2012	2013	2014	2015	2016
RES-Installation	42,98 zł	44,95 zł	48,04 zł	46,99 zł	46,44 zł	44,13 zł

Source: own study on the basis of communications published by ERO on www.ure.gov.pl

The implementation of the Installation may affect the level of heat prices in Olsztyn, but it should be emphasized that this is a systemic change that will affect the whole heating sector in Poland, as heat plants of power similar to the Heat Plant Kortowo need to implement environmental investments resulting from the IED directive until 2022, and the heat plants with a lower power have to introduce the changes until 2025. In addition, attention should be paid to the differentiation of heat prices due to the type of fuel consumed for heat production and to the fact that free CO₂ emission allowances are decreasing every year. Therefore depreciation as a result of realized investments adjusting to new environmental standards, fuel and energy costs and environmental costs will be the most important factors that will affect the level of future heat prices. It should be emphasized that the acquisition of EU subsidies will be reflected in the level of heat price and wastes management, to the benefit of the inhabitants.

EU ETS emission trading

The main instrument for the implementation of EU climate and energy policy the Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC (hereinafter referred to as the “**ETS Directive**”). It establishes the European Emission Trading Scheme, i.e. the obligation of the energy-intensive industries and electricity generation companies to purchase CO₂ allowances, introduced on the basis of EU legislation and the national law implementing them. In accordance with the directive, no installation may conduct any actions listed in Annex I of the ETS Directive, unless the installation has a permit for greenhouse gas emissions, issued by a competent authority or the installation is excluded from the community greenhouse gas emissions trading scheme. These regulations have been implemented in the Greenhouse Gas Emissions Trading Scheme Act.

According to Annex I of the ETS Directive, *“the combustion of fuels in installations with a total rated thermal input exceeding 20 MW, with the exception of municipal waste incineration plants (...), should be included in the ETS”*. Corresponding solution is provided for by the Greenhouse Gas Emissions Trading Scheme Act. Therefore, from the emissions trading scheme and thus the obligation to purchase CO₂ allowances, municipal waste incineration plants are excluded, regardless of their power. According to the European Commission's interpretation, whether a plant may be classified as a municipal waste incineration plant should be based on two conditions, i.e.: (i) its primary purpose is to incinerate municipal waste rather than generate electricity (i.e. in the absence of waste the installation does not work, other alternative or replacement fuels such as biomass, coal are not incinerated in the installation) and (ii) qualification of the majority of waste incinerated in a facility as municipal waste. Whereas in the European Union's countries, waste of communal origin, including waste from the MBP process, if their origin is communal (e.g. a fraction from municipal waste), are considered as municipal waste. Finally, the Incineration Plant in Olsztyn will be able to be excluded from the regime of the emissions trading scheme.

4. Business model of the PPP Project, tasks' and risks' division

4.1. Subject and contract's structure

The subject of the undertaking will be to ensure heat power supply to the Municipal Heating Network in Olsztyn and thermal processing of at least 100 thousand tons of municipal waste per year. The Project will be implemented under public private partnership with the Private Partner selected in open tender procedure in accordance with the Public Procurement Law. Open tender is a contract award procedure where all interested contractors may submit their tenders in response to a public contract notice. The preliminary selection of contractors in terms of whether they meet the determined requirements within experience, technical or financial and economic capacity does not apply in this case. The above capacities and experience are verified at the time of the offer's evaluation, in accordance with the requirements specified in the Terms of Reference.

It should be emphasized that the most important criterion for the selection of a Private Partner will be the criterion of the effectiveness of the Project's implementation determined by the price formula calculated on the basis of the relation - costs of the Installation's construction and costs of financing the investment outlays and the operating costs of the Installation to production guarantees covering the guaranteed amount of thermally processed waste (100 thousand tons per year), guaranteed amount of the generated (760-900 TJ per year), guaranteed amount of the generated electricity.

In order to obtain the most advantageous offers, MPEC, before the formal notice of the tender for the selection of the Private Partner, decided to analyse its current approach to the organisational model of the Project and consult it with market representatives and then adopt it to the existing conditions. In order to do this, MPEC carried out non-binding consultations with market representatives, as far as the Project's implementation model is concerned. The consultations were carried out in September – December 2017 and had a form of “technical dialogue”, conducted in accordance with Article 31a of the Public Procurement Law.

The notice on technical dialogue, published by MPEC on 5 September 2017, met with great interest. Within the prescribed time, 32 following entities applied to MPEC:

1. TIRU S.A.
2. Babcock & Wilcox Vølund A/S
3. SKT Sp. z o.o.
4. EEW Energy from Waste Polska Sp. z o. o.
5. Veolia Energia Polska S.A.
6. ITPOK Gdańsk Sp. z o. o.
7. BUDIMEX S.A.
8. Mostostal Warszawa S.A.
9. ENERIS Ochrona Środowiska Sp. z o.o.
10. SUEZ Polska Sp. z o.o.
11. PGNiG TERMIKA S.A.
12. SFW Energia Sp. z o.o.
13. GETEC Polska Sp. z o.o.
14. Doosan Lentjes GmbH
15. ASTALDI S.p.A.
16. REMONDIS Sp. z o.o.
17. RAFAKO S.A.
18. MVV Umwelt GmbH
19. Fortum Power and Heat Polska Sp. z o.o.
20. ENERGA Wytwarzanie S.A.
21. CHEMOSERVIS-DWORY S.A.
22. SBB ENERGY S.A.
23. Gülermak Ağır Sanayi İnşaat ve Taahhüt A.S. Branch in Poland
24. PAUL WURTH ENERGY s.r.l.
25. A.S.A. Eko Polska Sp. z o. o.
26. Valmet Technologies Oy
27. Keppel Seghers Belgium NV
28. Abengoa Energia S.A.
29. NOVAGO Sp. z o. o.
30. China Everbright International Limited
31. Construcciones Industrielles Da La Mediterranee Cnim
32. CEZ SKAWINA S.A.

The vast majority of the entities listed above took an active part in the technical dialogue in the framework of two rounds of meetings organised by MPEC. The technical dialogue concerned all aspects of the Project's implementation, including financial ones. The discussion with the participants of the technical dialogue covered the most significant assumptions of the business model and contract's structure, as well as tasks' and risks' division between MPEC and the Private Partner on the basis of the materials prepared by MPEC and the participants of the dialogue.

During the talks, a structure of the Project's implementation on the basis of contractual PPP model emerged.

The Project will be implemented in the formula of contractual PPP. The basis of the Project's implementation will be the PPP Agreement, including the standard tasks' and risks' division between the public (MPEC) and private party (the Private Partner). No other agreements between MPEC and the Private Partner are expected.



Source: own study

The PPP Agreement will regulate in detail all issues concerning rights and obligations of MPEC and the Private Partner, including tasks' and risks' division, settlement mechanism, principles of liability. Furthermore, the Functional-Utility Programme (FUP) will be annexed to the PPP Agreement.

4.2. Tasks' and risks' division

Under the Project, the Private Partner will be responsible for the design, construction, financing and operation of the Installation. With few exceptions construction risk and availability risk will be incurred by the Private Partner - within the scope and on the terms specified in the PPP Agreement.

Above all, the selected Private Partner will be responsible for:

- The design and construction of the Incineration Plant, the Peak Load Boiler, as well as of the Network Water Treatment Plant (hereinafter referred to as "WTP"),
- financing investment outlays for the construction of the Incineration Plant, the Peak Load Boiler and the WTP,
- operating the Incineration Plant, the Peak Load Boiler and the WTP (including operator activities, technical service and repairs) during 25 years from the Incineration Plant's commissioning,
- the Incineration Plant's accessibility and thermal treatment of 100 thousand tons of waste per year with a calorific value of 12.5 MJ/kg,
- the Installation's availability and heat supplies to the Municipal Heating Network in the amount of 760-900 TJ per year (the exact amount will be specified in the offer of the Private Partner),
- generating electricity in the Incineration Plant in the amount specified in the offer of the Private Partner,

According to the content of the PPP Agreement, the Private Partner will provide MPEC with a series of guarantees covering:

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- achievement of the Installation's Guaranteed Technical Parameters of the group A and B by the Installation after the construction and during the operation (hereinafter referred to as "GPT of group A and B"),
- guarantee of the availability of the Installation understood as the possibility of offtake of waste in the amount at least 100 thousand tons in 7800 h/year specified in the PPP Agreement,
- ensuring the availability of the Installation understood as the ability of the Installation to generate heat and electricity by providing the contracted capacities,
- production of the amount of heat and electricity specified in the Private Partner's offer,
- recovering energy from waste provided by MPEC through the production of heat and electricity in high-efficiency cogeneration with the parameters specified in the production programme,
- supplying heat to the Municipal Heating Network and electricity to the electrical grid with the parameters specified in the production programme,
- treating network water in the amount and with the parameters specified in the Private Partner's offer.

In addition, to the responsibilities of the Private Partner as the owner of manufacturing facilities, i.e. the Installation, will include the obligation to obtain and maintain in force the licenses required for the generation of heat and electricity as required by law and for the thermal treatment of waste. The Private Partner will also be burdened with the risk of selling electricity at the market price. The Private Partner will be responsible for the disposal of all combustion by-products, including slags and ashes. As it will be the Private Partner's responsibility to maintain the GPT of group A and B throughout the entire operation, he will be also responsible for making inspections, repairs of the Installation and removal of any failures. The Private Partner will be responsible for ensuring adequate protection of the Installation and introduction of procedures ensuring the safety of property, environment and people on the real estate on which the Installation is located. In addition, he will be obliged to perform all duties in a manner that does not exceed the emission standards or emission limits specified by the provisions of law, deterioration of the environment in large proportions or threat to human life or health and to carry out ongoing monitoring of the functioning of the Installation and other control activities related to the Installation and its impact on the environment, health and life of people. In addition, the Private Partner will monitor the provisions of law to adapt the Installation to the required technical standards.

On the other hand, the MPEC will be subject to demand risks within the scope and on the terms specified in the PPP Agreement. The responsibility of MPEC will be to provide the Private Partner with 100 thousand tons of waste with specific calorific value for a period of 15 years and payment of remuneration for thermal transformation of waste. The guarantee of the fulfillment of this obligation will be the horizontal agreements concluded between MPEC and ZGOK and other RIPOKs. The admissibility of concluding horizontal agreements has been confirmed by the position of the President of PPO. In addition, MPEC will be required to offtake heat in a fixed amount.

Under the PPP Agreement, MPEC will be obliged to:

- deliver to the Incineration Plant 100 thousand tons of municipal waste per year with an average calorific value of 12.5 MJ/kg during the first 15 years of operating the Incineration Plant, as well as 45-50 thousand tons per year during the last 10 years of operating the Incineration Plant,
- offtake 760-900 TJ of heat in each heating year (the exact amount will be specified in the Private Partner's offer) and pay for this heat.

The contribution of MPEC to the Project will consist of:

- selling the Private Partner the real estate at Lubelska Street (on which the Installation will be built),
- selling the Project's documentation in the form of copies of the legal opinions concerning the investment, ground investigation works at Lubelska Street, archaeological research and reports (including the investment's environmental impact report), posts of, among others, ministers, President of the Public

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Procurement Office, drafts of construction works and operator agreements – to be used by the Private Partner to the extent it deems appropriate,

- transferring the environmental decision obtained by MPEC (it will be necessary to receive the approval of the administrative authority which issued it, i.e. President of the City of Olsztyn),
- transferring the building permit for the Incineration Plant and the Peak Load Boiler obtained by MPEC (it will be necessary to obtain the consent of the administrative authority, i.e. President of the City of Olsztyn),
- transferring the obtained connection conditions and the agreements for connection of the Installation, including the partly covered connection costs.

In addition, MPEC will conclude an agreement for connection to the Municipal Heating Network with the Private Partner and will build the heat connection.

MPEC will bear unlimited liability for:

- a) **paying the Private Partner remuneration for thermal conversion of the waste delivered by MPEC to the Incineration Plant,**
- b) **remuneration for heat power ensured by the Private Partner from the Installation,**
- c) **remuneration for heat from the Installation received by MPEC to the Municipal Heating Network,**
- d) **paying the Private Partner the availability fee,**
- e) **paying the Private Partner remuneration for the transfer of rights of the Installation to MPEC and the property at Lubelska Street in the case when the PPP Agreement is terminated for reasons attributable to MPEC.**

In the remaining scope, MPEC's responsibility will be limited to the amount of PLN 55 000 000,00.

After the end of the partnership period, both generation sources will return to MPEC. The project was structured so that the Private Partner would be obliged to transfer the ownership of land at Lubelska Street together with the Incineration Plant and the Peak Load Boiler to MPEC.

The division of risks will be reflected in the PPP Agreement in the way shown in the table presented below.

Tasks' and risks' division

Risk	Description	MPEC	Private Partner
Risks of the design and construction period			
Risk related to the transfer of the environmental decision and the Project's documentation to the Private Partner	After concluding the PPP Agreement, MPEC will be obliged to transfer the environmental decision and the Project's documentation to the Private Partner	✓	
Risk related to the transfer of the real estate at Lubelska Street	Transfer of the real estate on which the Installation is to be built	✓	
Risk related to the condition of the real estate at Lubelska Street	Legal defects, unforeseen geological conditions, finds, etc.	✓	
Risk of ensuring financing of investment outlays	Ensuring debt and capital financing rests with the Private Partner. In the case the European Commission approves		✓

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	State aid in the form of subsidy, MPEC will transfer the obtained resources to the Private Partner in order to reduce the construction costs which will translate into lowering the heat price from the Incineration Plant		
Risk of obtaining the required administrative decisions, consents, permits at the design, construction and commissioning stages of the Installation	<p>The Private Partner is required to obtain all the permits and approvals required for construction, with the exception of the environmental decision and the building permit. At the same time, the Private Partner is entitled to obtain a temporary construction permit at its own risk.</p> <p>The Private Partner is responsible for obtaining and content as well as maintaining the above permits in force</p>		✓
Risk of delays in obtaining administrative decisions on the stage of obtaining temporary building permit	Delays in obtaining the decision despite best endeavours of the Private Partner, including the correct application (authorities' delay, appeals of environmental organisations, etc.)	✓	
Risk of repeal of the environmental decision or building permit obtained by MPEC	In the case of repealing the environmental decision or building permit for reasons not related to the Private Partner	✓	
Construction risk	Delay in the commencement and performance of the works, improper management, extra-budgetary costs, insufficient reserves		✓
Weather conditions risk	adverse or atypical weather conditions which have not been observed in Olsztyn in the last 20 years	✓	
Risk of delay	The Private Partner bears the risk of delay in design or construction except for the events for which MPEC took		✓

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	responsibility in accordance with the present division		
Risk related to the correct construction of the Installation			✓
Risk of delays due to protests concerning the incineration plant's construction	During the design and construction	✓	
Risk of delays due to the Force Majeure in the non-insurable scope	In the event of delays in the construction process due to the Force Majeure	✓	
Risk of the Force Majeure in the insurable scope	During the construction		✓
Risk of changes in the law at the construction stage	Risk of delays or increase in the construction costs of the Installation caused by a change in the law between the day of submitting the offer and the day of commissioning	✓	
Inflation in the period of obtaining the building permit (temporary building permit)	If the building permit is not granted on time, the delay in starting the works will affect the Private Partner's costs in the implementation of the turnkey investment (by the escalation mechanism)	✓	
Inflation in the period of construction works	The construction works period of the Incineration Plant is estimated to be about 36 months		✓
Risks of the operating period			
Obtaining and maintaining in force the permits, consents, concessions and licenses required during the operating period	Obtaining all required for conducting business activity with the use of the Installation, including operation, renovation, modernization of administrative decisions, permits, concessions, notifications, etc.		✓
Risk of the installation's efficiency and availability	Lack of achievement of the Installation's guaranteed parameters, production guarantees or capacity		✓
Risk of management costs	Employment, cost of materials, post-process waste management, etc.		✓

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Risk of ensuring stream of waste of accurate quality and calorific value	In 100% during the first 15 years of operating the Incineration Plant (unless the Private Partner takes over 15% of the risk; in such case MPEC will bear the risk in 85%) In 50 % during the last 10 years of operating the Incineration Plant	✓	
Risk of ensuring stream of waste of accurate quality and calorific value	In 15% for the first 15 years of operating the Incineration Plant, if the Private Partner takes over this risk in its bid (this will be one of the criteria for which scores shall be awarded) In 50 % during the last 10 years of operating the Incineration Plant		✓
Risk of ensuring energy production on the determined level	Lack of production and introduction of electricity to the DSO's network in the amount indicated in the offer of the Private Partner (assuming that MPEC has complied with its obligations in terms of waste delivery)		✓
Risk related to the income from heat	Heat tariff rate accepted by the President of the ERO	✓	
Risk related to the offtake of the generated heat	MPEC will accept the risk of heat offtake in the amount from 760 to 900 TJ per year	✓	
Sales of electricity			✓
Change in the law	Change in the law causing increase in investment outlays or operational costs	✓	
Regulatory risk	Lack of approval of the heat tariff presented by the Private Partner to the President of the ERO or approval of the tariff on a level below the proposed one	✓	
Insurance	Too low insurance, increase in the insurance costs, loss of insurance availability		✓
Insurance availability	No insurance available		✓

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	(the so-called Force Majeure)		
Inflation during the management period	Price formula on the basis of inflation (basket of indices, including the inflation index of consumer goods)	✓	
Inflation during the management period	Lack of adjustment of cost structure to the basket of indices		✓

4.3. Guaranteed waste stream on the basis of horizontal agreements

In order to provide a waste stream for the newly constructed Installation, MPEC has concluded the so-called horizontal agreements with ZGOK and several other RIPOKs from the Warmińsko-Mazurskie Voivodeship area. The subject of the agreements is the joint execution of a public task involving the management of municipal waste. Under the agreements ZGOK and RIPOK committed to supply a certain amount of combustible fraction from municipal waste for their thermal treatment for a period of 15 years. MPEC, on the other hand, committed to ensure their incineration, in the Incineration Plant. ZGOK and RIPOKs also obliged to cover the costs incurred by MPEC for the thermal treatment of waste.

MPEC has entered into the following horizontal agreements:

- 1) on 25 August 2015 with Zakład Gospodarki Odpadami Komunalnymi Sp. z o.o. in Olsztyn (min. 45 000 Mg of waste per year)
- 2) on 8 April 2016 with Przedsiębiorstwo Gospodarki Odpadami "Eko-Mazury" Sp. z o.o. with registered seat in Siedliska (min. 8 000 Mg of waste per year);
- 3) on 22 March 2016 with Ekologiczny Związek Gmin Działdowszczyzna (min. 5 000 Mg of waste per year);
- 4) on 17 June 2016 with Zakład Unieszkodliwiania Odpadów Komunalnych Spytkowo Sp. z o.o. in Giżycko (min. 20 000 Mg of waste per year);
- 5) on 11 August 2016 with Zakład Utylizacji Odpadów Sp. z o.o. in Elbląg (min. 8 000 Mg of waste per year).

In a letter of 28 May 2015 to MPEC, the Public Procurement Office confirmed the admissibility of concluding horizontal agreements without using the Public Procurement Law.

Furthermore, MPEC concluded an agreement with NOVAGO Sp. z o.o. having the status of Regional Waste Recycling Plant for the West Region (15 thousand tons of waste per year).

In total, on the basis of the aforementioned Horizontal Agreements and the agreement with Novago, MPEC ensured waste supplies in the amount over 100,000 tons per year during 15 years, counting from the day of the start of the regular and constant supply of the waste by MPEC.

4.4. Remuneration mechanism of the Private Partner

The remuneration of the Private Partner will have the form of the so-called **availability payment**, determined on the basis of the formula indicated below.

The Private Partner will not receive remuneration during the construction works. The remuneration will be paid from the first year of operation. Therefore, the remuneration that the Private Partner will receive for the entire operation period will cover the construction costs, financing costs and operational costs, including margin of the Private Partner.

Liabilities and settlements during the start-up period

During the start-up period, the Private Partner will not be entitled to remuneration for waste management, resulting from the amount of managed waste and the price of waste. MPEC will be responsible for delivering the waste during the start-up period. At the same time, the Private Partner will receive revenues from heat sales from MPEC in accordance with the variable heat price (PLN/GJ) resulting from MPEC's heat tariff, applied by MPEC in settlements with customers. In addition, during the start-up period, the Private Partner will receive revenues from the sales of electricity. The above rights will be granted for a limited period of 6 months, so as not to encourage delaying the start-up period. During that time, the Private Partner incurs costs related to waste management, including the costs of managing post-process residues. During the start-up period, the Private Partner is not obliged to produce heat and electricity.

Remuneration during the operation period

The Private Partner's revenues in a given year of operation will correspond to the construction costs (CC), financing costs (FC) and the operating costs (OC) set out in the Private Partner's Offer. The above-described revenues for a given year Y determined on the basis of the Private Partner's offer will come from four types of payments:

1. The remuneration payable by MPEC for thermal conversion of a ton of waste, corresponding to the market price for thermal conversion of similar waste, established on the basis of a formula agreed between MPEC and ZGOK (RIPOKs) in horizontal agreements,
2. The remuneration payable by MPEC for the supplied heat (GJ) and the provided heat power (MW) in accordance with the Private Partner's tariff for heat,
3. The remuneration payable by third parties for the guaranteed amount of electricity sold by the Private Partner at the market price,
4. Possible additional payment payable by MPEC to the Private Partner when revenues from the aforementioned sources (from 1-3) do not cover R_y .

The settlement mechanism will take into account production guarantees of the Private Partner and if they are not met, the settlements will assume that the Private Partner received revenues, as if he had complied with the guarantee. The formula will include production guarantees for electricity and heat for the reference amount of waste, i.e. 100,000 Mg and calorific value of waste, i.e. 12.5 MJ/kg for a given year of operation.

The Private Partner's revenues for a given year of operation will be determined by the following formula:

$$R_y = CC_y + FC_y + OC_y$$

where:

R_y revenues of the Private Partner in a given year of operation

y a given year of operation (next year counting from 1 to 25)

CC_r construction costs resulting from the Private Partner's offer for a given year of operation

FC_y financing costs resulting from the Private Partner's offer for a given year of operation

OC_y operating costs resulting from the Private Partner's offer for a given year of operation

where

$$AP = Ry - \sum PMNy, m_{1-12}$$

PMNy,m - the benefits from the sales of electricity (PEy,m), sales of heat (PHy,m) and waste management services (PWy,m) obtained by the Private Partner in a month m in a given year of operation,

AP - availability payment. If there is a "+" sign, then the Private Partner returns the overpayment to MPEC. If there is a "-" sign, MPEC will pay extra to the Private Partner.

4.5. Financing the investment outlays

The Private Partner will bear the risk of ensuring financing of the investment outlays. MPEC will require the Private Partner to present a document confirming the acquisition of debt or corporate financing along with the offer. The document can have a form of:

- a bank's declaration that the Project has been positively approved by the Committee, the term sheet has been agreed and the bank is ready to conclude a credit agreement after the choice of the Private Partner has been made and the PPP Agreement has been concluded or
- a corporate guarantee of financing, issued by a company of the capital group of the Private Partner, along with the bank's confirmation of the financial credibility of the entity which provides the corporate guarantee (i.e. that the aforementioned entity has a determined creditworthiness or has accumulated financial resources in an account in this bank).

In the PPP Agreement's draft, annexed to the Terms of Reference, MPEC will agree to pledge on the shares of the Private Partner and assignment of receivables of the Private Partner resulting from the PPP Agreement to the bank, in order to secure the credit loan.

Furthermore, MPEC will agree to conclude a standard direct agreement to the PPP Agreement with the financing bank. The direct agreement's draft will not constitute an annex to the PPP Agreement, it will be negotiated after the choice of the Private Partner with the financing bank.

4.6. EU subsidy for the construction of the Incineration Plant

On 30 December 2016, MPEC submitted an application to the National Fund for Environmental Protection and Water Management for subsidy for the construction of the Incineration Plant in a competition notified by the National Fund for Environmental Protection and Water Management within the Measure 2.2. *Municipal waste management* of the Operational Programme "Infrastructure and Environment" 2014-2020. MPEC's application received a positive formal evaluation and 1st grade substantial evaluation. On 9 November 2017, **MPEC received information from the National Fund for Environmental Protection and Water Management about a positive 2nd grade substantial evaluation of the submitted application under the condition of supplementing the pieces of information indicated by the National Fund for Environmental Protection and Water Management and submitting additional explanations within the prescribed period.** MPEC provided these pieces of information and explanations and awaits the final decision concerning the award of the subsidy (probably in the middle of January 2018). According to the regulations of the competition, generally the subsidy agreement shall be concluded within 60 days from the day of informing the Applicant (MPEC) about the final result of the application's evaluation. The subsidy agreement will have a conditional character – due to the adopted PPP formula, it will be necessary for the National Fund for Environmental Protection and Water Management to re-evaluate in terms of financial, feasibility and sustainability analysis and State aid after the selection of the private partner.

The subsidy will be paid in a few tranches. Due to the need of notifying State aid to the European Commission, the subsidy cannot be paid before obtaining a positive decision of the European Commission in terms of compatibility of State aid (subsidy) with the internal market.

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The applied subsidy sum amounts to **PLN 172 405 017,32**.

MPEC has been indicated as the beneficiary of the subsidy, while it will be the Private Partner that will be entitled to bear the eligible costs. It is planned that the paid sums of the subsidy will be directly dedicated for repaying the credit taken by the Private Partner.

The Private Partner will be obliged to implement the Project in accordance with the provisions of the Subsidy Agreement concluded between MPEC and the National Fund for Environmental Protection and Water Management and to observe the expenditure eligibility requirements. The risk of returning the subsidy for reasons attributable to the Private Partner will burden the Private Partner.

The entity to which the subsidy is granted must ensure durability of the Project within 5 years from the date of termination of its implementation. It means that the Beneficiary (MPEC) has to maintain the results of the Project within that time and the guarantee for their maintenance should be an accurate management and operational model of the assets which will be created thanks to the implementation of the Project. The condition of maintaining the subsidy is not to allow a significant modification of the project, i.e. such a modification which could lead to the change of the Project's scope resulting in non-realization of the Project's basic objectives, reduction of the product's indices or result. For the Project, implemented according to the Measure 2.2 of the Operational Programme "Infrastructure and Environment", the indices assumed in the application are as follows:

Indicators	Entity	Indicator's value
The indicators of the product		
Amount of completed waste-management installations	1	1
Amount of informational-educational campaigns connected with waste management	1	1
Result indicators		
Processing capacity of the waste-management installation	milligrams per year	100 000

Source: own study

4.7. Support of the City

MPEC has prepared a draft support agreement for the Project whose party will be the Municipality of Olsztyn and MPEC. Due to the possibility of obtaining more advantageous conditions of financing by the Private Partner in the case of the City's support, which will translate into the Project's price, MPEC plans to conclude a support agreement even before selecting the Private Partner. After concluding the PPP Agreement, the Private Partner and the financing bank would accede to the support agreement, becoming its party.

Detailed support rules are currently a subject of arrangements between MPEC and the City, represented by the President of the City of Olsztyn. The support cannot be a surety, guarantee or any other form which would have to be included in the multi-annual financial forecast (MFF).

The draft of the support agreement discussed with the City assumes that, among others, the City:

- 1) will not suspend or cancel entrusting the City's own tasks to MPEC in terms of ensuring the heat supply to the inhabitants, unless it will be required by the mandatory provisions of law;
- 2) will not change on its own initiative the model of the City's municipal management in terms of supplying the City's inhabitants with heat, binding on the day of conclusion of the support agreement, which would prevent or hinder the performance of MPEC's liabilities included in the PPP Agreement, in particular it will

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take actions for development of the network heat in the area of the City compatible with the Project's objectives;

- 3) without the bank's consent, it will not conclude agreements or perform other actions which could lead to the City's losing the control on MPEC as a subsidiary within the duration of the agreement, in particular it will not sell, not charge (also in order to secure) or will not dispose in any other way of the shares in MPEC's share capital or authorizations resulting from these shares in a way which would lead to MPEC's losing:
 - (a) the majority of votes at MPEC's shareholder meeting,
 - (b) right to appoint and dismiss the majority of the members of MPEC's Management Board,
 - (c) right to appoint and dismiss the majority of the members of MPEC's Supervisory Board.
- 4) without prior written consent of the bank, it will not vote (as the shareholder meeting) for adoption of the following Resolutions within the duration of the agreement:
 - (a) on the change of MPEC's founding act in a way which could prevent the City or MPEC from performing the liabilities pursuant to the Agreement;
 - (b) on the payment of dividend, unless reliable financial analyses performed by MPEC will confirm that such a payment or return will not cause a situation preventing MPEC from due performance of current and future liabilities pursuant to the PPP Agreement, of which it is a party;
 - (c) on the dissolution of MPEC as understood in the Article 270 of the Commercial Companies Code;
 - (d) on the transformation of MPEC as understood in the Article 551 of the Commercial Companies Code;
 - (e) on the fusion of MPEC as understood in the Article 491 of the Commercial Companies Code;
 - (f) on the division of MPEC as understood in the Article 528 of the Commercial Companies Code;
 - (g) on increasing MPEC's share capital if the shares in the increased share capital were to be taken up by an entity other than the City, unless (i) it is necessary for ensuring the performance of MPEC's liabilities pursuant to the PPP Agreement or (ii) the shares in the increased share capital will be taken up by the private equity investor and taking up of the shares will not lead to the private equity investor taking the control over MPEC;
 - (h) on decreasing MPEC's share capital and on redemption, transfer, charge or disposal of the shares in MPEC's share capital in any other way, as well as on fusion or division of shares, unless the decrease of MPEC's share capital, redemption, transfer, charge or disposal of the shares in MPEC's share capital in any other way concerns the shares taken up by an entity other than the City in accordance with the letter (g) above;
 - (i) on the emission of MPEC's bonds;
 - (j) on the divestiture of MPEC or its organized part;
- 5) will not charge fees or liabilities of discriminatory nature to MPEC as the entity conducting business activity in the area of the municipality and the entity performing tasks in the scope of the municipal management;
- 6) will not oblige MPEC to perform supplies or service to the end customers of a higher standard than the one resulting from the provisions of law;
- 7) will not establish or accede to an entity conducting competitive activity to MPEC or the Private Partner, unless the necessity to take such actions results from the provisions of law.

Furthermore, in the case of an early termination of the PPP Agreement in specified cases, as a result of which the termination of the credit agreement will follow, the City will be obliged to support MPEC in order to make settlements with the Private Partner.

5. Advisors

In the preparation of the Project, the following external advisors have been engaged:

- 1.) Banasik, Woźniak i Wspólnicy Sp. K. – legal advisor
- 2.) Ramboll Polska sp. z o.o. – technical advisor
- 3.) Investment Support Agata Kozłowska – PPP and public procurement advisor
- 4.) Experto Credito Ireneusz Kowalewski – financial advisor
- 5.) Inercon sp. z o.o. – economic advisor

6. Communication with society, information about the Project

From the early stages of project preparation, the process of informing the society was open and transparent. Public consultations were held, numerous meetings with the representatives of the Housing Councils, Councilors of the City Council of Olsztyn. In the local, nationwide and industry magazines, numerous articles describing the project were published. There is also a website dedicated to the project www.ec.olsztyn.pl, which is constantly updated with the latest information, in the section “Frequently Asked Questions” there are answers that describe the issue in a comprehensive way.

7. Eurostat

The Project will not be included in the balance sheet of the general government sector. The Decision No. 18/2004 published by Eurostat on 11 February 2004 *regarding recognition of the liabilities under private-public partnership agreements in the perspective of deficit and debt of the sector of the general government* lays down that such balances do not include the undertakings performed in the PPP formula, in the case of which the two following conditions are jointly fulfilled:

- 1) the private partner bears the construction risk, and
- 2) the private partner bears at least one of either availability or demand risk.

The rule was also expressed in the Article 18a, paragraph 1 of the Act on PPP which lays down that *“Liabilities resulting from the private-public partnership agreements do not influence the level of the domestic public debt and the public finance debt in a situation when the private partner bears the majority of the construction risk and the majority of the availability or demand risk – including the influence on the aforementioned risks of such factors as guarantees and financing by the public partner and asset allocation after the term of the agreement expires.”*

In the planned Project, the construction risk will rest on the Private Partner. Furthermore, the Private Partner will also bear the availability risk.

Due to the above, there is no obligation to include the Project in the balance sheet of the general government sector.