

Audit Report



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SACHVERSTÄNDIGENBÜRO WIDMAYER

1 Summary Sheet

1.1 General Information

Recycler legal name:	Megaport EOOD (Megaport Ltd.)		
Recycler plant address:	Nikola Gabrovski street n. 102		
Postcode and city:	BG-5000 - Veliko Tărnovo		
Country:	Bulgaria		
Certificate Number:	1992Z01-2022		
Type of Certification:	Monitoring audit		
Recycling Process description	Mechanical recycling (shredding - separation - washing - drying – extrusion) of films (polyolefins)		
Input Plastic Waste Description	 PE LD and LLD (2-D film) packaging pc waste including specification 0310-0, 0310-1, 323-2 Agricultural film PE-LD film in coils and leaf from blow film re-works 		
Recycler contact (name + email)	Daniel Sabev (waste@megaport.bg)		

1.2 Recycling Process

Recycling Process	Input plastic waste (type of material)	Presen- tation	Nominal capacity (t/a)	Post-consumer material accepted for recycling in previous 12 months (t)	Recycled output (type of material)	Level of traceability (1 to 3)	Washed material
Material recycling (pellet production)	PE-LD (packaging + agricultural sources)	bales	30,557	26,795	PE-LD pellets	1	Yes

This plant is a final recipient of plastics waste and produces products.

1.3 Recycled Output

Product number	Product name	Type (e.g., bottles, trays, etc.)	
BLD03	Black recycled LDPE	foil	
BLD23	Black recycled LDPE	foil	
BLD55	Black recycled LDPE	foil	
CLD00	Colored recycled LDPE	foil	
CLD23	Colored recycled LDPE	foil	
CLD55	Colored recycled LDPE	foil	
GLLD03	Green recycled LLDPE	foil	
TLD00	Transparent recycled LDPE	foil	
TLD23	Transparent recycled LDPE	foil	
TLLD00	Transparent recycled LLDPE	foil	

1.3.1 Audit Information

Audited by:	DiplGeol. Frank Widmayer	Sachverständigenbüro
Date of audit:	13/09/2022	Widmayer GmbH
Period of evaluation:	01/08/2021 to 31/07/2022	Mühlstraße 12, 74399 Walheim
Period of validity:	28/09/2022 to 15/02/2023	Tel.: +49 (7143) 969 58-10, Fax: -19 www.svb-widmayer.de, info@svb-widmayer.de

Dipl.-Geol. Frank Widmayer officially appointed expert on packaging waste management

responsible: chamber of commerce and industry for the Stuttgart region. ZSVR-Reg-Nr.: DE6299926428614



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2 Preliminary notes

This audit report is based on an appointment which took place on 13/09/2022 from 10:00 to 15:30 in Tărnovo). The date was agreed upon with the customer. The following persons participated in the audit:

Mr. Daniel Sabev, Megaport Ltd., General Manager (temporarily)

Mr. Petkova Ivelina, Megaport Ltd., Purchasing Manager

Ms. Hristina Ivanova, Megaport Ltd., Technologist

Mr. Frank Widmayer, SVB Widmayer GmbH, Auditor



3 Information on the Audit and Audit Results

3.1 General information

Type of audit	Monitoring audit		
Audited site	Megaport EOOD, Factory 3, Nikola Gabrovski street n. 102 5000 - Veliko Tărnovo (BG), Bulgaria		
Contact person	Daniel Sabev		
Position	Managing Director/ Megaport EOOD		
Telephone	+359 (62) 601 112		
Fax	+359 (62) 601 542		
Email	waste@megaport.bg		
Headquarters of the company	Nikola Gabrovski street n. 102, 5000 - Veliko Tărnovo (BG), Bulgaria		
Recycling Process description	Mechanical recycling (shredding - separation - washing - drying - extrusion) of films (polyolefins)		
Input Plastic Waste Description	 PE LD and LLD (2-D film) packaging pc waste including specification 0310-0, 0310-1, 323-2 (post-consumer) Agricultural film (post-consumer) PE-LD film in coils and leaf from blow film re-works (preconsumer) 		
Other processed material(s)	PE-HD post-consumer PP post-consumer		
Date of the audit	13/09/2022		
Date of the report	30/10/2022		

3.2 Declaration of Compliance

The plant is suitable for processing the following post-consumer input waste to create recyclate with the stated limitations:

Recycling Process	Input plastic waste (type of material)	Presen- tation	Nominal capacity (t/a)	Post-consumer material accepted for recycling in previous 12 months (t)	Recycled output (type of material)	Level of traceability (1 to 3)	Washed material
Material recycling (pellet	PE-LD (packaging + agricultural	bales	30,557	26,795	PE-LD pellets	1	Yes
production)	sources)						



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4 Audit Findings

The result of the audit is based on the following identified facts with regards to:

4.1 Licences, permits, and certificates

4.1.1 Business and operating licenses

Valid business and environmental licenses for Megaport EOOD have been presented:

• Operating licence (30.10.2019) no. 04-РД-147-06 from Ministry for the Environment and Water, Regional Inspectorate of the Environment and Water – Veliko Tărnovo

4.1.2 Environmental licenses & permits

• Permission to draw well water; no. 1834/11.02.2016 (max. 17,500 m³/y) from Ministry of Environment and Water, Danube Region Basin Directorate

4.1.3 Waste transport licenses

 Transportation permit, issued by Ministry of Environment and Water on December 15th 2017. The permit includes the following waste codes and quantities in t/a: 020104 (4,000); 070213 (500); 191204 (15,000).

4.1.4 License & permit conditions – waste plastics processed

EWC 020104: R3, R12; 4,000 t/a EWC 070213: R3; 10,000 t/a EWC 120105: R3; 4,000 t/a EWC 150101: R12; 4,500 t/a EWC 150102: R3, R12; 25,000 t/a EWC 170203: R3, R12; 4,000 t/a EWC 191201: R12; 1,000 t/a EWC 200101: R12; 1,000 t/a EWC 200102: R12; 500 t/a EWC 200139: R3, R12; 3,000 t/a Company: Megaport Ltd., Tărnovo, Bulgaria

Certificate: 1992Z01-2022

4.1.5 License & permit conditions – storage

EWC 020104: R13; 4,000 t/a EWC 070213: R13; 10,000 t/a EWC 120105: R13; 4,000 t/a EWC 150101: R13; 4,500 t/a EWC 150102: R13; 25,000 t/a EWC 150107: R13; 2,000 t/a EWC 170203: R13; 4,000 t/a EWC 191201: R13; 1,000 t/a EWC 191204: R13; 20,000 t/a EWC 191205: R13; 1,000 t/a EWC 191207: R13; 1,000 t/a EWC 191208: R13; 1,000 t/a EWC 200101: R13; 1,000 t/a EWC 200102: R13; 500 t/a EWC 200139: R13; 3,000 t/a

4.1.6 ISO 14001

The company is certified according to standard ISO 14001:2015 from RINA Services S.p.A. (Genova, Italy), N° EMS-8115/S, valid until 27.06.2023.

4.1.7 ISO 9001, 18001, EMAS

The company is certified according to standard ISO 9001:2015 from RINA Services S.p.A. (Genova, Italy), N° 39889/20/S, valid until 27.06.2023.

4.1.8 Insurances (1)

There is a general agreement for Megaport EOOD about the most important insurances by UNIQA covering buildings, equipment, stock, public liability and partly conditions of Employers' liability that will be prolongated yearly. The current validity has been checked.

4.1.9 Insurances (2)

See 4.1.8



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4.2 Management team

4.2.1 Company directors

Mr. Daniel Sabev: General Manager

4.2.2 Staff structure & responsibilities

This is part of the certified quality management system according to standard ISO 9001:2015. An Organogram with the executive staff has been presented; job descriptions (supervisors, key staff), are defined and documented.

4.2.3 Staff qualifications – Technical

This is part of the certified quality management system according to standard ISO 9001:2015. The plant manager holds recognized, technical qualifications.

4.2.4 Staff training – Technical

This is part of the certified quality management system according to standard ISO 9001:2015. A training plan for the staff has been presented.

4.2.5 Staff qualifications - Quality management

This is part of the certified quality management system according to standard ISO 9001:2015.

4.2.6 Staff training – Quality management

This is part of the certified quality management system according to standard ISO 9001:2015. A training plan for the staff has been presented.

4.3 Incoming material procedures and controls

4.3.1 Purchase specifications

All waste material is typically delivered in bales, bulk deliveries are extremely rare. The input exists usually of known qualities or there are patterns send in advance. Specifications of input material defined by the company are available (DSD specifications).

4.3.2 Waste category identifiable

All material received by the company can be classified as post-consumer waste.

4.3.3 Weights & dates of delivery recorded

All incoming waste is weighed on a weighbridge at the entrance. This weight is registered, weighing tickets were present.

4.3.4 Supplier details recorded

Each incoming batch can be linked to a certain supplier.

4.3.5 Haulier details recorded

Each incoming batch can be linked to a certain supplier.

4.3.6 Weighbridge calibrated

The existing truck scale (serial number 1109038) was calibrated in July 2022. An annual maintenance is proven by invoice.

The big bags with the end products (granulates) that are sold externally are weighed on a platform scale (serial number 709003, calibrated in October 2020).



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4.4 Stock management

4.4.1 Stockyard details

Covered storage input ba	0 m²	
Uncovered storage input	18,049 m²	
thereof	site 1	13,800 m²
	site 2	300 m ²
	site 3	500 m ²
	site 4	3,449 m²
Storage of recycled output	ut (big bags): 100 m²
Storage of recycled output	ut (silos):	30 m ³

4.4.2 Incoming stock identifiable by supplier

Most incoming waste is baled and will be labelled (if not done already by the supplier). Incoming deliveries are recorded in an inventory book.

The physical demarcation of the individual deliveries is partly insufficient. Sometimes supplier data is not (or no longer) recognizable on the material.

4.4.3 Storage conditions

All incoming plastic waste is stored on an impermeable surface (concrete).

Most of the output material with regrind/pellets are stored in a silo for the own film production in plant site 2. Products intended for external sale are stored in the production hall.

4.4.4 Stock management system

All incoming waste deliveries are recorded in the incoming register, noted information on date, supplier, material and weight. The data is then delivered to the stewardship department that transfers them on electronic database and update the official logbook requested from the authorities. Waste consumption are quantified daily by collecting bales labels, then reported into daily processing report.

Daily production reports are available for the finished products with the quantities sold and/or transferred to Plant 1 or Plant 2 so that the stock can be updated.

4.4.5 Stock checks

A physical stock check of the input waste is held on a monthly basis. The number of bales is counted and checked against the information in the spreadsheet with the stock information as well as against the information on the orange labels on each delivery in the input stock. Deviations are recorded and corrected in the stock management system.





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4.5 Mass balance of the recycling process

Mass balance overview		Description	Amount (t)	Percentage (%)	
ЧFО	Site capacity (t)		30.000		
PLANT INFO	Equipment Capacity (t)		39.465		
	Nominal Capacity (t)		30.557		
Ъ	Input Plastic Waste (pre- + post-consumer)		26.326	98,3	
INPUT	Additives & MB		440	1,7	
	Other		0	0	
	Recycled Output	PE pellets	16.210	60,6	
5		PP pellets	160	0,6	
оитрит	By-products	PP pellets	160	0,6	
O	Subcontracted Recycling		0	0	
	Waste		9.583	35,8	
Mass	balance (difference in %)		173	0,6	
Beneficial Output (%)			16.370	62,2	
Yield (%)			16.210	61,6	
Energy consumption [kWh/t (output)]			907,1		
Water consumption [m ³ /t (output)]			4,2		

Material Balance Description:

Stock changes were taken into consideration in input and output. Equipment and nominal capacities have been calculated upon the quantities of Input plastics processed on washing lines. Counting of working time proofed via shift protocols. All input data and output volumes are documented, daily production of solid waste and by-products are instead estimated and plausibilized by shipping docs. For "sludge" (solid process waste), the amount used to calculate the mass balance was subtracted from the liquid fraction, which the company estimates to be up to 30 %. The balance is in itself coherent and feasible.

Traceability description:

Traceability system is based on the check of input waste as per EN 15347:2007, production process and recycled output are compliant with EN 15344. Recycled content of the product can be calculated using the formula in section 5 of EN 15343:2007. Records are kept of all the above data. The incoming batches are stored per waste code, origin and quality. The labelling of the bales was taken over, a separation of the batches is not carried out.

Recycling process is fed by mixing different waste batches of known composition and homogeneous colour. Weekly plans proof production's scheduling, recycled output is made through dedicated campaigns based on coloured-type recipe. Traceability of production is given by the production plan, the shift report and the list of abandoned labelled bales.

Quality controls on pellets are usually done at Factory 2 (film production) every 12 to 15 tons.

The system is documented through daily production reports and stock reports. The records are also stored in an electronic database for process monitoring. All recycled output batches can be traced back to the input batches by using the shift logs. They show all relevant information about the individual deliveries and provide a direct connection to the big bags produced with regrind / granules.

4.5.1 Capacity calculation

Торіс	unit	value
Approved input capacity	t/a	30,000
Approved operating hours (unlimited)	h/a	8,760
Planned off times (holidays, maintenance, etc.)	h/a	1,977
Planned production hours	h/a	6,783
Availability	%	85%
Nominal input (maximum input)	t/h	5.30
Equipment capacity (6,783 h x 85% x 5.3 t/h)	t/a	30,557

4.5.2 Input volume reconciliation

All inputs of waste plastics are treated within the plant, no subcontractors are involved in the recycling process. The input volume does not exceed the equipment capacity. Less than 30% is being sold to third parties.

4.5.3 Process inputs & outputs recorded

Records are kept of all materials taken into and out of the recycling process. Information is documented in a spreadsheet software as well as by paper for Input Plastic Waste, Recycled Outputs, Solid Wastes and if present by-products. During the audit the shift logs and the data transfer to the reporting have been checked for May 2022.

4.5.4 Recycling Process volume reconciliation calculation

Verification of total input volume:



With this the certified input has not exceeded the permitted (equipment) capacity.

4.5.5 Beneficial Output and yield

Yield is 61.6%, beneficial output is 62.2%.



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4.5.6 Documented control of recycling process

The production process is recorded by shift logs. With these documents, the complete production including all raw and additive / auxiliary materials as well as all generated target products, by-products and wastes are recorded.

During the audit the shift logs and the data transfer to the reporting has been checked for May 2022.

4.5.7 Use of production statistics

The information recorded during the recycling process are used to control the processing quality and to optimize the production planning and the performance of the recycling process.

4.5.8 Tracing input plastic waste & input batches to suppliers

Each baled input waste batch is identifiable by a label indicating the kind of material, the supplier's name and the date of delivery. As those data are recorded in the stock management system its easy finding a definite delivery in the input stock.

4.5.9 Tracing recycling output to suppliers

Withdrawals of bales out of the input stock will be recorded on the shift logs including the number of bales. At the end of the processing the produced big bags with regrinds / pellets are recorded. Detailed information is big bag number and weights as well as the production date (this information will also be shown on the big bags).

4.5.10 Recycling process as per EN15343

The recycling process of the company is compliant to the EN-standards concerning procedures and methodology, quality assurance and calculation of the recycled content.

The company operates broadly in line with norm EN15343; regarding sections 4, 5 and 6. The following evidences are present:

- Control of input material (see paragraph 4.9.2)
- Batch identification (see paragraph 4.4.2)
- Process variables recorded (see paragraph 4.5.3)
- Quality control test of the products (see paragraph 4.9.4)

- Batch identification of the products (see paragraph 4.5.7)
- Characterization of the plastic recyclates (see paragraph 4.9.4)
- Traceability (see paragraph 4.5.8 and 4.5.9)
- Quality assurance (see paragraph 4.9.1)

4.5.11 Known recycled content

Input material in recycling process comprises pre- and post-consumer plastic waste, in extrusion are used some quantities of fillers and additives. The pre-consumer material is only production waste from the associated neighboured film factory. The intended end product is predominantly extruded PE granulate, which can be divided into 5 categories by grade, colour and filtration used (BLD- CLD-TLD- GLLD- TLLD). Subordinated PP films as a by-product from the film separation unit will be processed. The Company's identification system allows to further classify the input waste in household, commercial and industrial ones. This is generally done through the link with producers and/or suppliers, system can be affected by approximation, but quite reliable on big quantities

Detailed information about products shares of post-consumer (municipal and commercial) and pre-consumer content are reported in paragraph 10 "Known Recycled Content- List of products".



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4.6 Checks on recycled output

4.6.1 Sales records

The output will usually be processed in another plant site of the same company. Hence only delivery notes will be created. Only in the rare cases where more pellets than needed have been produced they will be sold to other customers. The documents show the required information such as name of the customer (if applicable), colour, quality and weight of recycled output as well as the batch number(s).

4.6.2 Evidence of sales

Within this audit the auditor selected May 2022 as test month and within the list of sales/deliveries of this month the documents for pellets, by-products and waste have been checked at random (at least 3 weigh slips/freight papers/invoices per material type).

4.6.3 Evidence of by-product treatment or use

Evidence was present for by-products (shredded lumps, metals, separated plastics material) sold or send to suitable licensed companies.

4.7 Environmental protection

4.7.1 Disposal of solid waste

Wastes are separated consequently and sold/disposed to different recipients. Evidences have been checked at random (see 4.6.2).

4.7.2 Conditions of disposal of solid waste

Solid wastes usually are stored in containers in- or outside the production hall. Light material will be baled and stored outside while heavy material like iron binding wires is stored in open containers.

4.7.3 Licensed treatment of wastewater - Off site

The company cleans wastewater and reuses it in the washing process in the best possible way before disposing it into the public sewage system.

4.7.4 Capture and treatment of runoff

Rainwater is discharged to the sewer through downspouts.

4.7.5 Pellet and waste loss procedure (1)

Loose light waste materials are baled and stored in a section of the stockyard. There are no bunkers for storing the material and bales are often insufficiently wired and therefore sometimes partially or completely open during storage movements, resulting in loose film/film waste. There is a fence surrounding the stock that captures the loose film material.

Granules only leave the production hall in big bags or in silos. No corresponding loss of material was discernible during the inspection.

4.7.6 Pellet and waste loss procedure (2)

The company has not yet implemented procedure(s) to avoid/ handle pellet and waste loss.

4.7.7 No contamination of local environment

During the on-site audit no visual environmental contamination (no littering, no leaks, no abnormal exhausts) has been detected.



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4.8 Subcontracting

4.8.1 Control of Subcontracted recycling

n/a

4.8.2 Suppliers informed of subcontracted recycling

n/a

4.8.3 of subcontracted processing

n/a

4.8.4 Evidence of subcontractors' waste transport licenses

n/a



4.9 Quality management

4.9.1 Quality assurance system

A visual inspection takes place on all incoming waste. If the material does not fit the expected quality, it is stored separately and clarified with the supplier. In all other cases results are recorded in an input control file that contains all relevant information such as polymer, supplier, weight, quality ranking. During the production process, only visual inspections take place at irregular intervals.

4.9.2 Input plastic waste input controls as per EN15347 and EN15343

The information required by EN 15347 (batch size, colour, form of waste and main polymer) will be noted during recording of the load.

4.9.3 Quality testing during Recycling Process

During the production process, only visual inspections take place at irregular intervals. Results of these checks are recorded in the shift logs.

4.9.4 Recycled output product specifications

Each batch of recycled output is sold accompanied by TDS that contains a general description, physical characteristics, applications and packaging conditions.

4.9.5 Permitted variances in recycled output product specifications

TDS define the range of acceptability for MFR, density, particle size and moisture, in compliance to the type of product. The quality and the range of acceptability in compliance to the type of product will be tested in the film/bag manufacturing site.

4.9.6 Recycled output product specification as per EN standards (characterisation)

The recycled output specifications as defined by the film/bag manufacturing site are broadly in line with the required characteristics as specified in the EN-standard 15344. However, the testing of these characteristics will be carried out using the orders requests as a guidance.

4.9.7 Out of specification load procedure

There is a written, formal procedure in place for dealing with deliveries of input waste which are not within the agreed specification. The procedure (work instruction) is combined with the one for the "rejected load procedure".



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4.9.8 Rejected load procedure

There is a written, formal procedure in place for rejecting deliveries of input waste which are not within the agreed specification. The procedure (work instruction) is combined with the one for the "Out of specification load procedure".

4.9.9 **REACH**

The company is Reach compliant. Safety Data Sheets are in place for all substances they produce.



5 Recycling Process

5.1 Process description

The company runs three plant sites in Veliko Tărnovo. At facility one films from virgin PE material is to be produced. Facility two produces film material and bags from recycled raw material and facility three is a plant for the production of re-granules (pellets) from film plastic waste. A major part of the output from facility 3 will be used as input of facility 2. The recycling plant 3 is designed for the treatment of PE-LD 2-D waste. Subordinated production waste from facility 2 will also be processed.

The recycling process itself is characterized by one self-sufficient line with all main production steps (sorting, shredding, separation, washing, drying, agglomeration, extrusion). Line 2/3 exists of one preparation line (sorting, shredding, separation) followed by two parallel washing and extrusion lines.

The main products are PE granules used in facility 2 for manufacturing new films where virgin PE will be replaced by recycled PE. Technical features are aligned with EN 15344 norm. Granules produced fed mainly the internal consumption (>70 %), the sells to external customers are subordinated (<30 %).

A facility for water purification using chemical and physical processes Is in operation. This which allows to reuse big shares of the process water and to reduce the fresh water consumption. The plant has been inspected on site and in operation in October 2021. The suitability to remove the impurities from input waste and produce PE-LD pellets with the characteristics required from the target application can be confirmed.

The Recycling Process takes place with the following main steps:

- Manual pre-sorting: Sorting on colour, elimination of wire and rough impurities
- Shredding
- Magnetic separation
- Sieving (line 2/3)
- NIR separation (line 2/3)
- 2 flotation and washing steps
- Dewatering
- Drying
- Intermediate (blending) silo
- Agglomeration
- Extrusion & pelletising



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5.2 Flow chart



Company: Megaport Ltd., Tărnovo, Bulgaria

Certificate: 1992Z01-2022





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6 Non-conformities identified

none

7 Auditor's Comments

The company operates 3 production sites, including one recycling plant for the production of pellets from post-consumer film waste and one for the production of new film and bags from those pellets. Only a share of about 20-30% of the produced pellets will be sold to external customers.

The main purpose of certification according to the EuCertPlast standard is to obtain the Blue Angel for some of the consumer products (plastic bags). Furthermore, the company wants to purchase packaging film waste from the German market. For that the company is in need of a certificate acc. to the requirements of the Central Agency Packaging Register (ZSVR). There are many parallels in those two certifications, therefore the company decided to combine both corresponding audits as well as the reports. This consolidation will be realized within the upcoming EuCertPlast certification audit in the beginning of 2023. This is the reason for the short period of validity of the current certificate.

The following improvements are suggested/required:

- Ensure clear demarcation between individual deliveries
- Improve protection against plastic inputs into the environment especially from drifting of small pieces of film.
- Significant increase in the PP yield of rejected partial quantities of the input stream; this is to be demonstrated by the EuCertPlast audit, probably in January 2023.