

ENVIRONMENTAL IMPACT ASSESSMENT STUDY
ON

**PLANT FOR TREATMENT OF MUNICIPAL AND
INDUSTRIAL NON-HAZARDOUS WASTE WITH AIM
UTILIZING THE VALUABLE FRACTIONS
CM SHIVEC, MUNICIPALITY OF KAVADARCI**

DEKONS EMA, SKOPJE



„ECO ENERGY SYSTEM“ SKOPJE



ECO ENERGY SYSTEM
WASTE MANAGEMENT SOLUTIONS

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MAIN GOAL AND SPECIFIC OBJECTIVES OF THE PROJECT

➤ Main goal of the project

Treatment of municipal waste or waste similar to municipal, as well as non-hazardous industrial waste, with aim utilize the valuable fractions.

➤ Specific objectives of the project:

- Fulfillment of the obligations that the Republic of Macedonia has regarding the EU legislation, the National Strategy (Plan) and the National Waste Legislation for the re-use of waste for different purposes, i.e. using the waste as source of energy, material that can be re-used or recycled, reducing the quantity of waste that ends up on the landfill etc.

➤ Benefits:

- Economic benefits, as well as environmental benefits.

LOCATION OF THE PROJECT SITE

Location: CP 1292/1, in CM Shivec, Municipality of Kavadarci with an area of 15 772.27 m².

The parcel is located within an established industrial zone, defined by the Urban Plan outside of the populated areas for construction of an industrial complex “Feni Industry”, location 1 – smelter, CM Shivec 2010-2020, for G1 ***for which the SEA procedure was previously carried out.***

The parcel is bordered with:

- Warehouse for technical gasses AD “Tehnogas” – warehouse Kavadarci,
- Regional road Rosoman-Kavadarci,
- Road that leads to “Feni Industry” and service road.

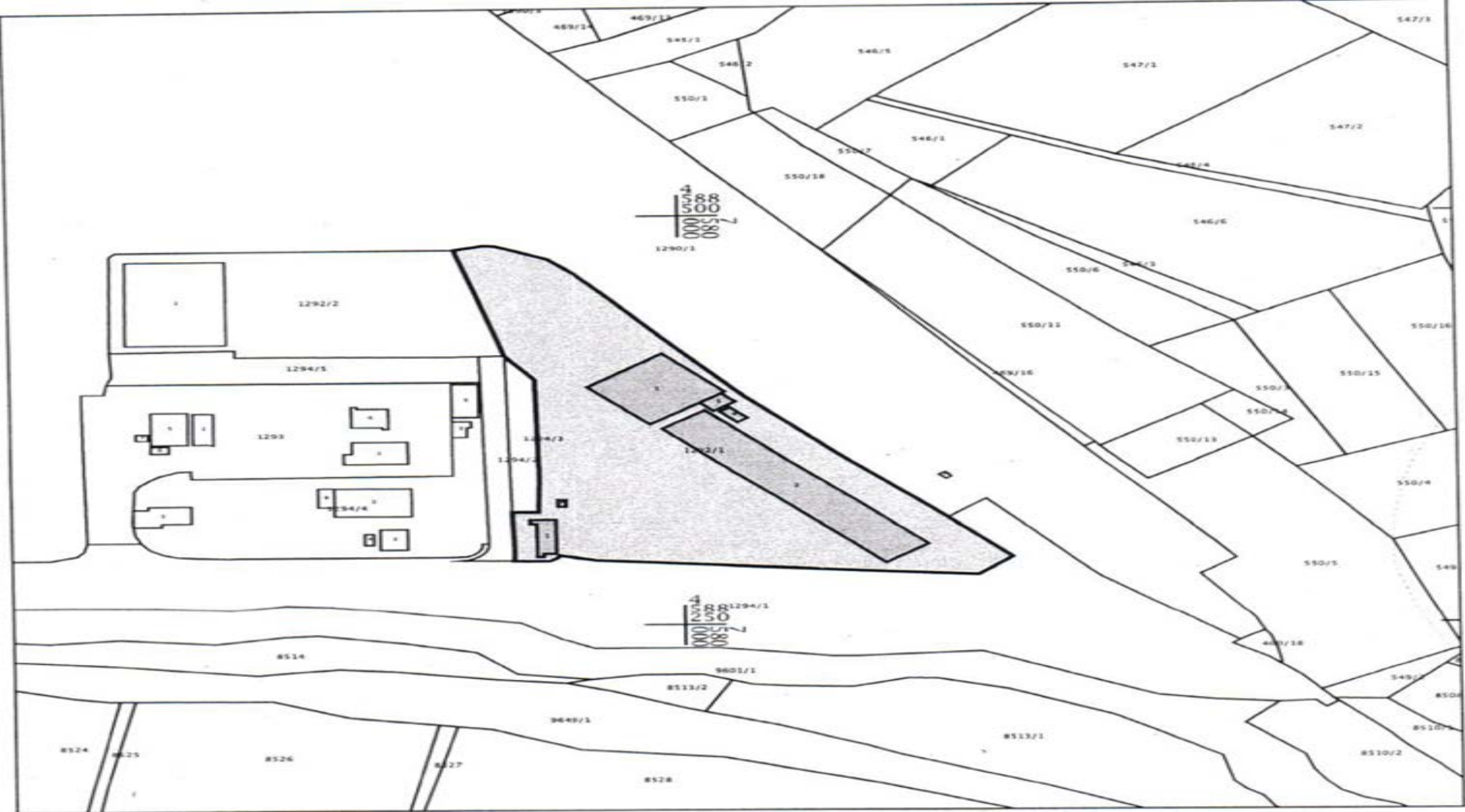
Macro location of the parcel: agricultural land, channels for irrigation of the agricultural lands and the populated areas: village of Vozarci ~2 km air distance from the parcel; village of Shivec ~2.2 km and Kavadarci ~4 km.



проектна област

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Google Earth



DESCRIPTION OF THE PROJECT SITE

- The parcel is equipped with all the necessary infrastructure: water supply, electricity, sewer and drainage system;
- There are facilities on the parcel that were reconstructed and adapted for the needs of the waste treatment facility;
- The facilities are in private property;
- The Investor of the Project has signed contract for rent, to set up waste treatment plant, for a period of 10 years.

PROJECT DESCRIPTION

Construction of a technological line AXIS 3000/b for treatment of non-hazardous industrial waste

Treatment of non-hazardous waste, solid waste or sludge.

Transformation of the waste into inert material with constant physical characteristics will be carried out.

Catalyst and additives (calcium based) with natural origin will be used, in order to reduce the degree of hazard of the fractions that have to be disposed on the landfill, and also inhibition of the leachate.

Designed capacity: 25 000 t/year or 68 t/day.

It is predicted to be treated an amount of 10.000 t/year solid waste and sludge with an amount of 3.978 t/year

PROJECT DESCRIPTION

Technological line for treatment of municipal waste and waste similar to municipal - PHARAON 300

- This technological line performs separation of the dry and wet fraction of the waste, i.e. the organic from the inorganic fraction.
- The organic fraction of the waste, after the process of waste grinding and magnetic separation, is carried to the MATRIX line, which is part of PHARAON 300, and here physico-chemical treatment of the waste is performed (stabilization and microcapsulation of the waste).
- **Designed capacity** 150 000 t/year or 455 t/day,
- It is predicted to be treated an amount of 149.760 t/year waste, out of which 69.760 t/year fresh waste collected from the region.

PROJECT DESCRIPTION

- The technological line AXIS 3000/b will be firstly installed for the treatment of non-hazardous industrial waste, and subsequently the line PHARAON 300 for the physico-chemical treatment of the municipal waste and waste similar to municipal.
- The fresh municipal waste will be collected on the territory of the region,
- The non-hazardous industrial waste will be collected from the whole country;
- In order to fulfill the capacity of the plant and a continual work to be secured, previously treated non-hazardous waste and waste similar to municipal is planned to be imported, that will be purchased in baled state and will be stored at the location until the initiation of the treatment process;
- Generated waste after processing of the waste will be deposited on the municipal landfill in Kavadarci (until the predicted regional landfill in Rosoman become operational) or, depending on the features, will be handed to authorized waste managers for further treatment.

PROJECT BENEFITS

Economical benefits from the project

- Production of fuel with high caloric value – RDF fuel that will be used as energy source;
- The stabilized organic fraction (SOF) can be used as raw material for production of cement, bricks, as well for covering of landfills, open mines etc., and reducing utilization of the natural resources;
- Separation of materials that can be re-used and recycled (metals and plastic);
- Stimulation of the wider economy and setting new businesses regarding the re-use of the beneficial fractions from the waste;
- Improving the socio-economical condition in the region through more job opportunities, municipal budget incomes etc.

PROJECT BENEFITS

Environmental benefits

- Improvement of the the environmental media and the conditions within the Municipality and the Region and avoidance the problems that arise from inadequate waste treatment;
- Reduction of the waste quantity that ends on landfills and cause pollution of the environment and endangers human health;
- Waste treatment with application of method for solidification and stabilization; and reducing the mobility of the pollutants, which contributes for its easy deposition;
- Use of the fractions derived from the treatment of waste and reducing the need for new areas for landfilling;
- Production of RDF fuel, i.e. energy from renewable source and saving of the natural resources;
- Production of stabilized organic fraction.

Identified significant impacts

Air:

- ▶ Expected air emissions from the waste treatment: CO₂, SO₂, NO_x, N₂O, NH₃, CH₄, H₂S, CO, HCl, Cl₂, HF, heavy metals, possible dioxin and furane release, bioaerosols, odor, possible bacteria contamination, insects, waste spreading etc.
- ▶ **Possible negative impacts on:** ambient air quality, agricultural lands near the location, soil (by air sedimentation).
- ▶ **Positive impacts:** Reduction of air emissions and greenhouse gasses at regional level from the existing waste management practice.

Soil:

- Deposited sediment from the air, incidental spills.
- The stabilized organic fraction and waste (the final product from the process) can contain heavy metals, salts and other organic pollutants.
- **Possible negative impacts:** Direct or indirect effects on the quality of: soil, water, biodiversity, people.

Identified significant impacts

Water

- Rinsing of the deposited sediment with the storm water, discharging of polluted wastewater in the sewers that end up in a recipient, incidents.
- Improper quality of the stabilized organic fraction and waste that will be disposal on the landfill.

Possible negative impacts: Disturbance of the water quality, soil, population etc.

Biodiversity

The location is out of protected or endangered area (habitats or species) and no significant impacts are expected.

Landscape

Presence of huge amount of waste, products from the waste treatment process, metal silos for storage of the raw materials, scrubbers for treatment of the emissions, a number of heavy vehicles etc.

- ▶ **Possible negative impacts:** Visual effects will be minimal, the location is within an industrial area, next to a service road and will be visible only for the users of the service road, the employees from the neighboring objects, random passerby etc.

Identified significant impacts

Noise

- Increased noise levels and vibrations at the location and roads.

Possible negative impacts: no significant impacts are expected (location is far away from the populated areas and there are not sensitive animal species).

The increased traffic can affect the regional population (waste collection from the region).

Accidents

Natural disasters, fire, explosions, incidental spills etc.

Possible negative impacts: environmental media, health and safety of the population.

Health and safety of the population

Air emissions from the plant and transport, increased noise level from the production activities and transport vehicles, possible pollution of the water, soil, occurrence of rodents, pests, insects, accidents (fire, explosion etc.).

Mitigation measures

- Establishing and respecting the waste acceptance procedures in the plant, required by the waste regulation;
- Limiting the waste that is not suitable for treatment;
- The storage of the waste and the auxiliary materials to be done in accordance with the prescribed procedures and regular control;
- The time necessary for waste storage to be reduced to minimum;
- Fresh municipal waste to be treated on a daily base in order to eliminate the possibility of making huge stocks of waste;
- Appropriate stabilization of the organic fraction in order to be avoided the possible occurrence of a leachate during its further use as a stabilized organic fraction;
- Placement of biofilters, besides scrubbers is obligatory in order to be achieved significant reduction of the emissions of volatile organic compounds, as well as NH_3 ;
- ▶ The production facilities to be enclosed or fenced;
- Placement of impermeable vessels that will collect the possible spills of leachate or liquid waste, providing appropriate drainage and its returning into the treatment process;

Mitigation measures

- Regular control of the safety of the waste storage sites and the raw materials and products from the process;
- The discharge of wastewater into the sewer system should be done in regard with permit for water discharge;
- The plant design to be in accordance with the location conditions and the local ambient;
- The Operator of the facility should sign contract with PE “Komunalec” – Kavadarci, which is the Operator of the municipal landfill and future Operator of the regional landfill;
- Taking into consideration the option for construction of transfer station;
- Application of measures for incidents, accidents and hazards/disasters;
- Creating a mechanism for communication and coordination between the Operator and the representatives of the local interested parties (settlements, associations, economic chambers etc.);
- Implementation of measures for protection of the workers, etc.

EIA PROCEDURE

The procedure for Environmental Impact Assessment for the implementation of the project is defined in:

- Law on environment („Official Gazette of the Republic of Macedonia“ No. 53/05, 81/05, 24/07, 159/08, 83/09, 48/10, 124/10, 51/11, 123/12, 93/13, 187/13, 42/14, 44/15, 129/15, 192/15, 39/16), where the requirements of the EU Directive on EIA are transposed (85/337/EEK);
- The Regulation for project determination and for the criteria by which the need for implementing an EIA procedure is determined („Official Gazette of the Republic of Macedonia“ бр.74/05, 109/09 and 164/12);
- ▶ The actual project activity – Municipal and non-hazardous industrial waste treatment facility, with aim utilizing the valuable fractions – belongs to Appendix I-section 8: "Installations for waste depositing, for incineration, combustion and **physical and chemical treatment**", i.e. projects for which the preparation of EIA Study is mandatory.

EIA PROCEDURE

Steps in the EIA procedure for this project:

- ▶ The Investor of the Project submitted an Notification letter for intention to the Ministry of environment and physical planning (MOEPP) for the realization of the Project and Request for determining the scope of the project;
- ▶ The Notification letter together with the Request for determination of the scope were announced:
 - At the website of the MOEPP;
 - daily newspaper.
 - MOEPP issued a Decision, confirming the need for implementing an EIA procedure for the Project and determined the scope of the Study
- ▶ The Decision is announced on the website of the MOEPP, as well as in a daily newspaper, available on the whole territory of the Republic of Macedonia.

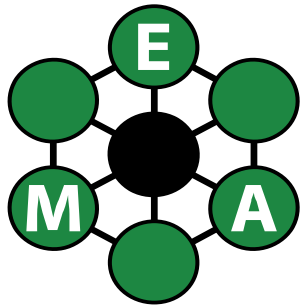
EIA PROCEDURE

- ▶ Preparation of EIA Study by authorized EIA experts;
- ▶ Submission of the EIA Study to the MOEPP, Municipality of Kavadarci, Vardar Planning Region and disclosure of the electronic version on its websites, for public accessibility to information regarding the project;
- ▶ Informing the public about availability of the EIA Study (printed and electronic version) for a public review, at the websites of MOEPP, Municipality of Kavadarci, as well as in a daily newspaper;
- ▶ Informing the public about the public hearing regarding the EIA Study at the websites of MOEPP, Municipality of Kavadarci, as well as in a daily newspaper.

EIA PROCEDURE

- ▶ Public hearing was held in the premises in the Municipality of Kavadarci,
- ▶ The public had no remarks regarding the contents of the EIA Study,
- ▶ Preparation of Minutes of meeting and its announcement on the website of the MOEPP,
- ▶ No remarks regarding the EIA Study were submitted during the period provided for public consultation,
- ▶ The Minister on environment established a committee that reviewed the Study and issued a Report for its appropriateness;
- ▶ The Appropriateness Report of the study was announced on the MOEPP website and in a daily newspaper;
- ▶ The MOEPP issued a Decision for approval of project implementation and it was announced on the MOEPP website.

THANK YOU FOR YOUR ATTENTION!!!!



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