



enterprise europe

## **Boletín de Oportunidades de Cooperación: Medio Ambiente**

**Boletín nº 147: Octubre 2016**

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***Medio Ambiente:  
Tecnologías Ambientales***

## Technology Offer

# Knowledge-based software to assess and improve the carbon footprint of a product over its complete life cycle

## Summary

*An Austrian SME has developed a tool to calculate, compare, improve and communicate product carbon footprint, giving a clear indication of a product's environmental performance. It has an intuitive interface, requires no previous knowledge and provides robust results by using a comprehensive inventory database based on international standards. The company is looking for commercial agreements with technical assistance or license agreements and research and/or technology cooperation agreements.*

<b>Creation Date</b>	15 September 2016
<b>Last Update</b>	23 September 2016
<b>Expiration Date</b>	23 September 2017
<b>Reference</b>	TOAT20160915001
<b>Profile link</b>	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/d53419ad-0179-46a1-bed3-88bc974b1af1">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/d53419ad-0179-46a1-bed3-88bc974b1af1</a>

## Details

### Description

Products cause environmental impacts along their entire life cycle and companies are required to integrate environmental considerations into product development. Due to ever stricter regulations and increasing customer awareness, one of the most critical calculations refers to Product Carbon Footprint (PCF), a focused version of a Life Cycle Assessment (LCA), which considers only one category of environmental impacts, namely global warming. However, the environmental assessment and actual calculation itself can be very daunting tasks for people new to the field. They often do not know where to start, are hindered by restricted database access and complex software that requires expert knowledge of methods to arrive at first results. Also, many solutions only cover certain phases of the product life cycle and do not provide a complete picture.

An Austrian environmental engineering and R&D intensive SME has developed a software tool that allows users to easily calculate, compare, improve and communicate the PCF of their product over its entire life cycle: from material use to end of life and final disposal. It is specifically geared towards product developers, designers and engineers who have little or no prior experience of environmental assessments, LCA or PCF calculations. The software features an intuitive interface and provides results by using a comprehensive inventory database, following the principles set in LCA standards (ISO 14040/14044).

The program can be accessed through a web-based version or by installing a local interface, if the sensitivity of applications and data security require so. Additionally, the software offers flexible application options and is suitable for first assessments as well as in-depth analyses - depending on time, information and capacities of the user.

Data entry is enhanced based on readily available datasets. The user selects the appropriate options and values (e.g. weight, material, energy consumption etc) based on the five life cycle phases:

1. Materials (extraction and processing): selection of different materials and supplier parts.
2. Manufacture: assembly of the various parts and components into the finished product including its accessories.
3. Distribution: transport of the finished product from its manufacturing site to the end consumer and the market.
4. Product use: scenarios based on the typical customer applications.
5. End-of-Life: treatment and disposal of products.

The software calculates the total associated greenhouse gas emissions, whereas the output section reacts instantly to changes in the input data, giving the user direct feedback on the impact of possible material choices, efficiency improvements or design changes. Product models can easily be duplicated to compare the effect of design or engineering changes or different use scenarios. Finally, the tool identifies the most relevant life cycle phase and suggests appropriate improvement strategies to decrease the environmental impact over the entire life cycle of the product.

The software is connected to a customizable database, which can be further interconnected or integrated with other external databases. The software is implemented with Javascript (NodeJS) and can be executed in a bundled form as a web-server or within a webkit-container on most common platforms. The whole look and feel can be easily adapted to a company's corporate design using mainstream web technologies (HTML, CSS).

The product is already available in international markets (Austria, Sweden) and has clients worldwide. The company is looking to offer the tool via distributors or re-sellers through commercial agreements with technical assistance or license agreements. The company is also looking to further localize or adapt the product with technology cooperation agreements or to explore further potential, co-develop or initiate complex engineering projects with research partners worldwide.

## Advantages and Innovations

The tool is positioned uniquely in the market as an efficient, fast and accurate way for companies wishing to carry out a LCA of a product at an introductory or intermediate level at an affordable price.

From the technical viewpoint, the tool is not designed as a standalone PCF calculator, but aims to provide support to producers in identifying targeted and effective improvement strategies for their products. Its user interface is specifically geared towards product developers, designers and engineers who have little or no prior experience on LCA or PCF calculations.

The software offers the following advantages over current solutions:

- interactive results which respond instantly to changes in the input data, giving the user direct feedback on the impact of possible material choices, process or design changes and guides to efficiency improvements
- importing capabilities for existing data in various file formats, such as computer-aided design files and spreadsheets as well as information from product data management systems
- quick reporting function which summarizes valuable information along the entire life cycle of the product to facilitate the communication of the results
- easy to adapt to specific company requirements, i.e. users can incorporate existing bills of materials and automatically link them to the most suitable environmental datasets
- enables team collaboration: from modelling parts and components during a new product development process to incorporating supplier parts, the software enables users to easily share

product models and duplicate parts  
- facilitates the exchange of data along the value chain e.g., for collaboration with suppliers.

## Stage of Development

Already on the market

## Comments Regarding Stage of Development

The software is already available on the market and its development is complete.

## IPR Status

Trade Marks, Copyright

## Profile Origin

Private (in-house) research

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## Keywords

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### Technology

04007	Energy efficiency
04007001	Energy management
10002003	Capture and Storage of CO2
10002007	Environmental Engineering / Technology
10002015	Life Cycle Assessment

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## Network Contact

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### Issuing Partner

AGENCIA ANDALUZA DEL CONOCIMIENTO

### Contact Person

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**Open for EOI :**    **Yes**

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## Dissemination

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### Send to Sector Group

Environment

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## Client

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### Type and Size of Organisation Behind the Profile

Industry SME <= 10

### Year Established

0

### Already Engaged in Trans-National Cooperation

Yes

### Languages Spoken

English  
German

### Client Country

Austria

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## Partner Sought

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### Type and Role of Partner Sought

1. Commercial agreement with technical assistance

Type of partner:

- Industrial SMEs

Role of partner:

- Use the software as part of their internal reporting processes as well to report against global reporting frameworks to assess their products carbon footprint using the life cycle approach.

2. Licence agreement with SMEs in international markets.

Type of partner:

- Software vendors or sales agents

Role of the partner:

- Localise the software to meet the requirements of users in the country;  
- Establish business channels in the country by licensing of the software.  
- Introducing the software to the market.

3. Research cooperation agreement

Type & role of partner:

- Research organisations and companies looking for training of personnel within their Environmental Management Systems – e.g., EMAS or ISO 14001 schemes.

- SMEs (industry) or large public/private organizations who wish to implement common research projects on optimization of their processes and wish to implement LCA.

4. Technical cooperation agreement

Type of partner:

- SMEs focusing on industrial software



## Role of partner:

- Build a network with companies that are focused on product LCA to lead generation, improve the product based on vertical market needs and secondly to provide a combination of sales and implementation services in complex industrial environments.

## Type and Size of Partner Sought

SME 11-50, University, R&D Institution, SME <10, >500 MNE, 251-500, SME 51-250, >500

## Type of Partnership Considered

- License agreement
- Commercial agreement with technical assistance
- Technical cooperation agreement
- Research cooperation agreement

## Technology Offer

### Snow and ice removing machine through melting

#### Summary

*The equipment developed by a Romanian inventor is a snow remover using the process of melting. The melting snow and ice machine is an equipment used for melting snow where it falls naturally, blizzard or stored. It also melts glazed frost and ice. The equipment can be used for smooth or porous surfaces that need to be kept uncovered by ice or snow, like parking, flight runway, exits, stations, solar panels, sport fields, etc. The cooperation envisaged is technical cooperation agreement.*

<b>Creation Date</b>	19 September 2016
<b>Last Update</b>	23 September 2016
<b>Expiration Date</b>	23 September 2017
<b>Reference</b>	TORO20160919001
<b>Profile link</b>	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/ddbd8b2d-8e02-4e56-8561-d083e6e8cfb9">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/ddbd8b2d-8e02-4e56-8561-d083e6e8cfb9</a>

#### Details

##### Description

The snow and ice remover equipment is a project developed and improved in 8 years of research and testing by a Romanian inventor.

The machine works with an electric motor and uses a centrifugal fan to suck in air at the outside ambient temperature. The air is passed through multiple tabs of radiant batteries changing its temperature and speed. The air is propelled outside through pipes in hot jets at a controlled temperature and grazing displacement. The operating principle is based on grazing directing jets of hot air on porous or smooth, flat or arched surfaces, which melt snow on the way to settle or already filed. The water resulted from the melting process is directed to the water flow of the area.

This devise is designed to keep surfaces free of snow and ice, being a snow remover equipment with multiple applications. Some of the most important applications in the cold season when snow remove, thawing surfaces and/or removing glaze is needed are: parking, airdromes, roundabouts, curves on roads with high slope, intersections, entrances and exits of highways, entrances and exits of buildings with massive influx of population, pavements, stations, open space passenger platforms, crosswalks, sports fields, army floors prepared for pouring concrete, solar panels, fish farms, pontoons, etc.

There were developed two kinds of melting snow machines, one for industrial application and one for domestic use. They are visible in the photos attached.

The equipment can be installed individually or in series and activated remotely, in addition they can be positioned on / partly / in the ground depending on destination. Moreover, the machine can be design with the shape and size required by the using site. It needs to have access to electricity.

The inventor is interested in finding partners for technical cooperation agreement, that can be achieved through technology transfer, integrating of the solution into the partner activity, adapting the solution or searching together for further developing the equipment for specific needs.

## Advantages and Innovations

The main advantage of using this device in the cold season is that it removes instantly snow falling naturally and removes gradually snow already filed at any stage (loose or ice cream) by simply melting it where it is without the intervention of classic machinery, huge and expensive created to carry or push snow from one place to another, in this way disturbing the traffic in that area.

The snow and ice removing machine has an electronic component with memory capacity of the working times so it can be activated remotely, a person is not required for commissioning and directing. Also there is no atmospheric or noise pollution, machines can not explode, can function 24 hours a day, also during flights in airdromes.

## Stage of Development

Available for demonstration

## Comments Regarding Stage of Development

The equipment is available for testing and demonstration. It can be design for the requested destination.

## IPR Status

Patent(s) applied for but not yet granted

## Comment Regarding IPR status

Patent applied for Romania but not yet granted.

## Profile Origin

Private (in-house) research

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## Keywords

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### Technology

02002006	Hardening, heat treatment
03001001	Cleaning Technology
10002013	Clean Production / Green Technologies

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## Network Contact

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### Issuing Partner

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**Open for EOI :**    **Yes**

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**Client**

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**Type and Size of Organisation Behind the Profile**

Inventor

**Year Established**

0

**Already Engaged in Trans-National Cooperation**

No.

**Languages Spoken**

English

**Client Country**

Romania

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**Partner Sought**

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**Type and Role of Partner Sought**

Potential partners are airports, roads and sidewalks maintenance companies, banks, malls, institutions, etc., interested in their clients protection and willing to introduce this snow and ice remover solution.

Also of interest are industrial manufacturers seeking to explore and put on the market the equipment for industrial and/or domestic use.

Their role is to initiate and develop a partnership trough technical services agreement.

**Type of Partnership Considered**

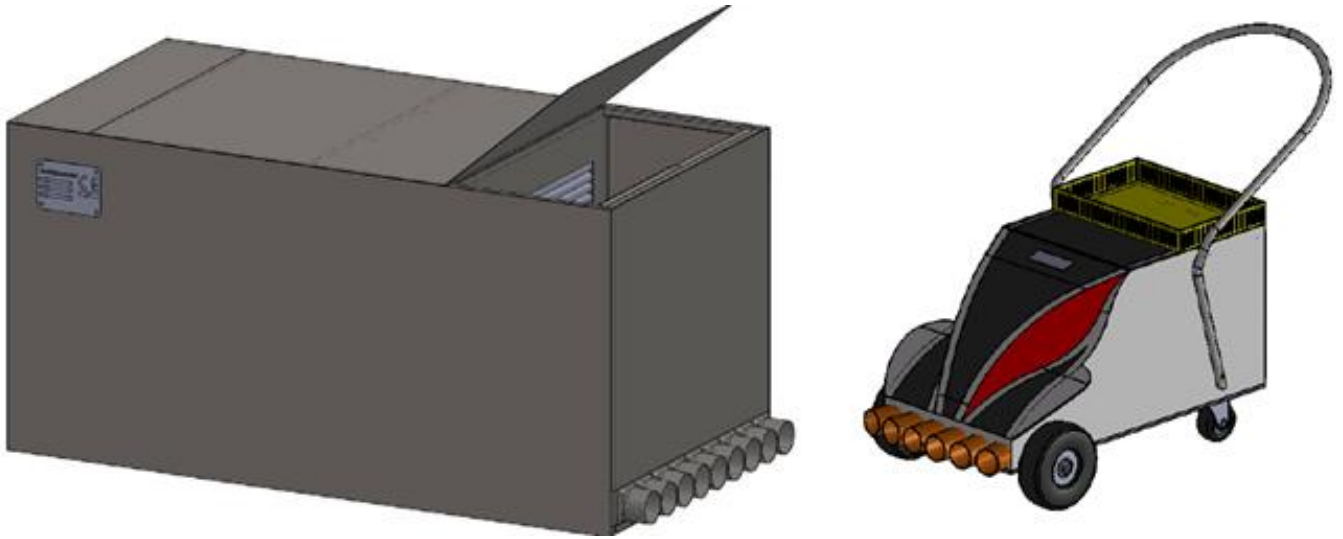
Technical cooperation agreement

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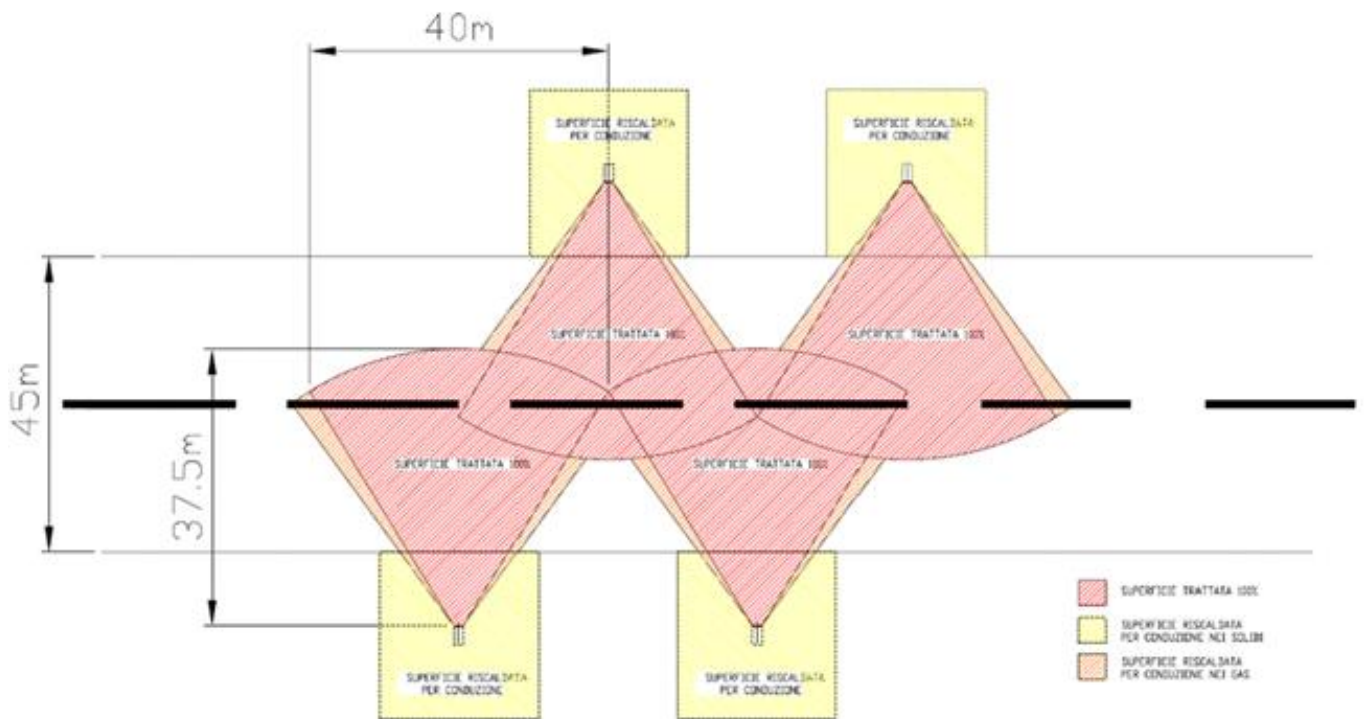
**Attachments**

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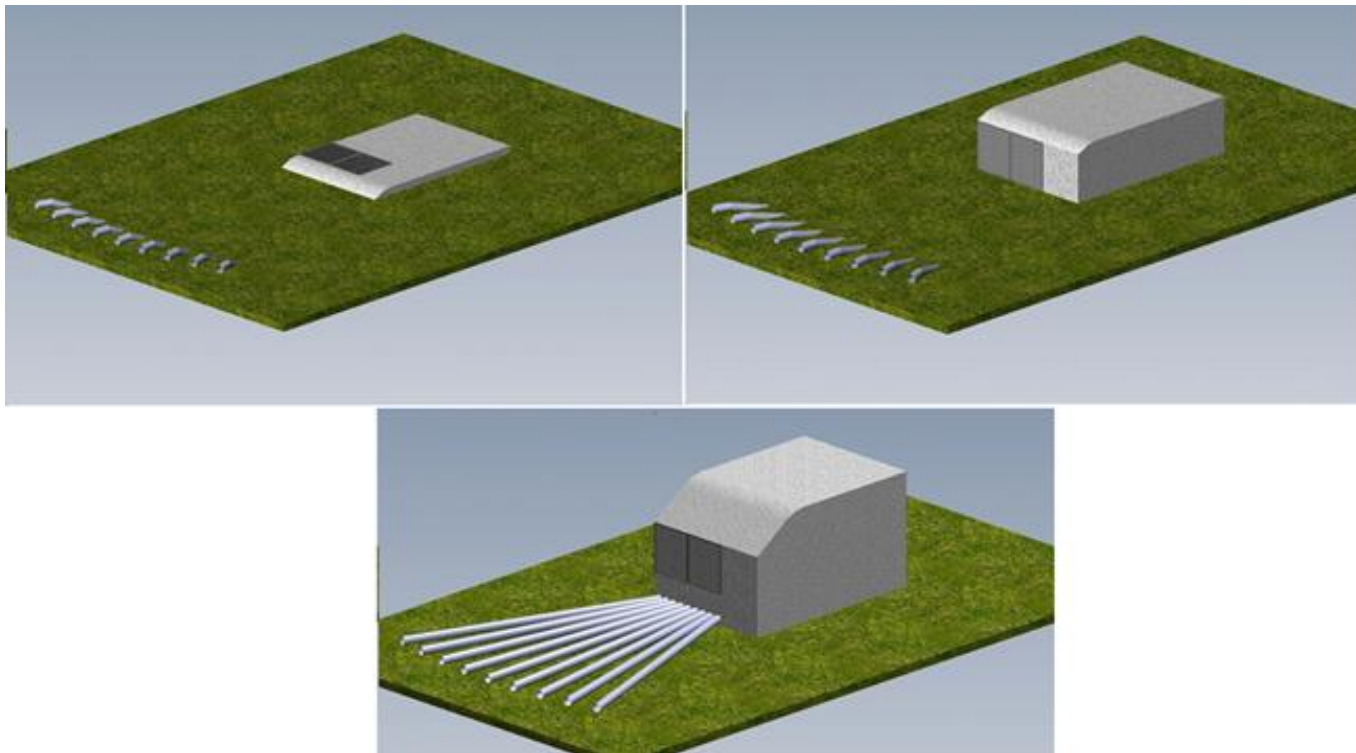
1 the machines.png



4 aerodrome.png



2 positions.png



3 roads position.png



## Technology Offer

# Used Industrial Oils Regeneration Technology Boosting Circular Economy

## Summary

*A Czech SME active in ecology and recycling of waste has developed cost efficient technology for regeneration of used industrial oils. The technology is 4 - 5 times cheaper at regenerating oil compared with currently known methods, is TUV certified and complies with relevant EU standards. The regeneration unit is available both in stationary and mobile versions. The company is looking for operators of machinery or recycling companies for commercial agreements with technical assistance.*

<b>Creation Date</b>	13 September 2016
<b>Last Update</b>	14 September 2016
<b>Expiration Date</b>	14 September 2017
<b>Reference</b>	TOCZ20160905001
<b>Profile link</b>	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/eac5d2bd-c06b-45f9-84d5-f90d7c646dd1">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/eac5d2bd-c06b-45f9-84d5-f90d7c646dd1</a>

## Details

### Description

Used oils are waste material which belongs to hazardous waste. In larger quantities (approx from 0.5 tons) they are bought as a secondary raw material and due to their very low price they are usually used as "energy oils" mainly in combustion (in metallurgical industry, cement industry, local special furnaces). Nevertheless combustion is a very inefficient way of utilizing this valuable material. There are several known methods, e.g. regeneration via refining process in a refinery but they are expensive, which means that commercial efficiency is about zero or even a loss. Using this technology it is possible to regenerate used industrial oils repeatedly.

This very progressive method is 4 – 5 times cheaper and offers profitability. Its return on investment is about 2 years depending on actual conditions in a particular country, e.g. different purchase prices of used oils.

The company developed this regeneration technology in collaboration with its daughter company. The technology is able to regenerate oils from production processes:

- Transformer oil
- Turbine oil
- Hydraulic oils
- Engine (motor) oil

The device is manufactured both in a stationary and mobile version. The regeneration device comprises of two containers which are after their bringing to the operation place put together into a prescribed position and secured with couplings. Other operation units as a bentonite bin, oil tanks, storage space for chemicals and waste storage are placed according to local

conditions. Connection to the local power grid can be solved either by a flexible cord or by setting up a temporary connection point in the close proximity of the containers.

The technology is fully automated and manufactured in compliance with relevant EU standards, and TUV certified. One device is profitably operated within the company's own used oils regeneration operation. Commercial agreement with technical assistance as a way of partnership has been chosen as the company would like to find partners for transferring know how (knowledge of the technological process), provision of assembly of the device and training the staff at the client company. The companies searched for are operators of machinery or companies active in the recycling and regeneration of used oils. Interested companies are invited to the Czech Republic to bring a sample of their used oil to practically verify the method on the existing innovative regeneration device.

## Advantages and Innovations

- Both stationary and mobile version of the device is available
- As opposed to other technologies this one combines lower energy demands together with the reduced legislative burden required for its launch due to homologation as a "mobile" device.
- Significantly cheaper way of used oils regeneration (4 to 5 times cheaper) compared to existing methods
- The technology complies with the EU Action Plan for the Circular Economy bringing benefits for both the environment and the economy.

## Stage of Development

Already on the market

## IPR Status

Secret Know-how

## Profile Origin

Private (in-house) research

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## Keywords

### Technology

10002007	Environmental Engineering / Technology
10003004	Recycling, Recovery

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## Network Contact

### Issuing Partner

AGENCIA ANDALUZA DEL CONOCIMIENTO

### Contact Person

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**Open for EOI :**   **Yes**

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## Client

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### Type and Size of Organisation Behind the Profile

Industry SME 11-49

### Year Established

2003

### Turnover

<1M

### Already Engaged in Trans-National Cooperation

Yes

### Languages Spoken

English

### Client Country

Czech Republic

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## Partner Sought

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### Type and Role of Partner Sought

Type of partner sought:

Industry, Recycling

Industrial companies - operators of machinery (turbines, transformers, hydraulic systems, motors)

Recycling companies - companies providing recycling and regeneration of industrial oils with regard to the Circular Economy

Role of partner sought:

Implementing the technology in machine operations; acquisition of the technology for the purpose of providing profitable recycling and regeneration services.

### Type and Size of Partner Sought

SME 11-50,SME <10,>500 MNE,251-500,SME 51-250,>500

## Type of Partnership Considered

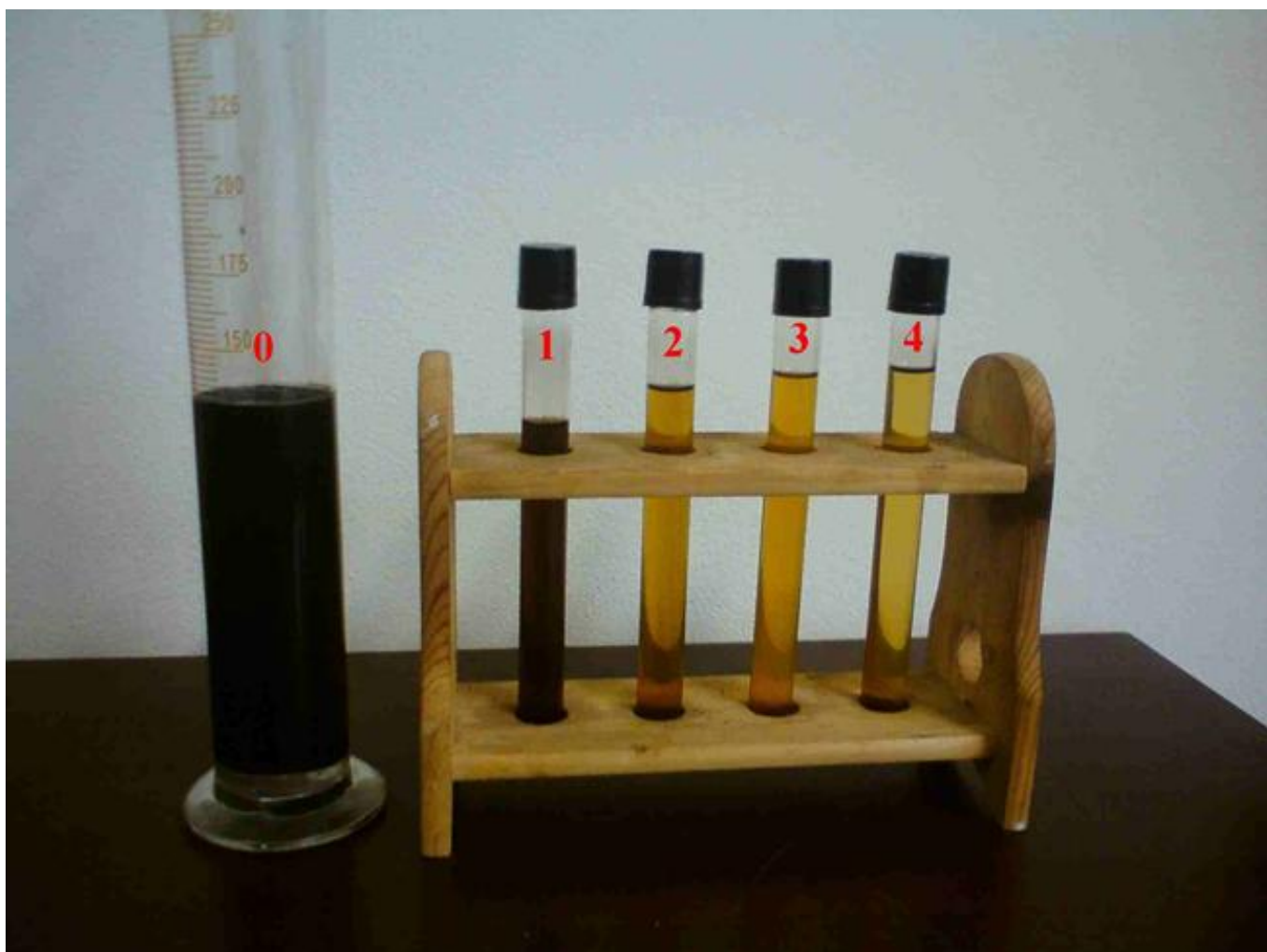
Commercial agreement with technical assistance

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## Attachments

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Oil purification.jpg



## Technology Offer

# Waste treatment technology to handle liquid waste originating in the processing of the benzene-toluene fraction of carbochemical origin

## Summary

*A Polish R&D organization is one of the largest chemical research entities in Poland. The company has developed a technology for the treatment of liquid waste originating in the processing of the benzene-toluene fraction (B-T). The company is looking for an industrial partner that would implement this technology within the framework of commercial agreement with technical assistance.*

Creation Date	10 June 2016
Last Update	14 September 2016
Expiration Date	14 September 2017
Reference	TOPL20160610002
Profile link	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/551016f9-267d-4672-ad5c-1fac900ab5a">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/551016f9-267d-4672-ad5c-1fac900ab5a</a>

## Details

### Description

The Polish R&D organization offers licenses and know-how for modern chemical processes. The company offers in deep, state of the art expert and analytical services in the the following areas:

- Petrochemistry and carbochemistry
- Organic synthesis
- Chemistry and technology of polymers and plastics
- Household chemistry
- Industrial catalysis and biocatalysis
- Applied physical chemistry
- Auxiliary materials for medicine
- Process safety
- Environmental protection
- Biotechnology

The Technology has been tested in a large-laboratory scale in the industrial facility of a cooperating company. Mass balance and energy balance have been calculated for the process. Additional studies are being carried out to verify the brief fore design which was developed for the basic design in the years 2011-2012. The Technology has been adapted to the needs of one of the largest Polish petrochemical companies. Liquid waste treatment solution, specific to the parameters of the material to be handled in that particular facility is as follows: reduction of liquid waste volume up to 94.5%, water recovery up to 93.9 %, concentration of compounds. Both, the reduction of the waste volume and its lower contamination provide the benefit of lower costs of waste disposal because the cost of industrial waste disposal by outsourced companies depends on its contamination, among other things.

The company is looking for experienced industrial partners involved in i.e. production of electrochemical sources of energy to establish technical cooperation with commercial agreement to implement the technology in question.

## Advantages and Innovations

Membrane techniques enable the separation of contaminants of which the particles are measured at the molecular or ionic level. The membrane processes are new and have been developing fast for the last couple of years. Every membrane is a filter and, as in the case of conventional filtration, at least one component of the mixture to be separated is able to pass freely across the membrane while the other ones are captured by it. All membrane processes have the following two features: separation proceeds in a purely physical manner, i.e., the components are not subjected to any thermal, chemical or biological changes. This enables the components to be recovered and reused.

The separation by means of membranes can be adapted to any production scale because the process is modular. The technology is tailored to the specific chemical facility – this makes it impossible to compare the particular treatment methods with regard to performance or investment costs. Outsourcing a licensed company to take care of the waste collection and disposal is to be considered as a competitive solution to the technology. The membrane techniques can be used for the disposal of liquid waste regardless of its origin

## Stage of Development

Already on the market

## IPR Status

Patent(s) applied for but not yet granted

## Comment Regarding IPR status

The patent has been applied in Poland

## Profile Origin

Private (in-house) research

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## Keywords

### Technology

10002007

Environmental Engineering / Technology

10002011

Soil and Groundwater Pollution

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## Network Contact

### Issuing Partner

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**Open for EOI :**   **Yes**

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**Client**

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**Type and Size of Organisation Behind the Profile**

Industry SME 50-249

**Year Established**

1916

**Already Engaged in Trans-National Cooperation**

Yes

**Languages Spoken**

English  
Polish

**Client Country**

Poland

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**Partner Sought**

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**Type and Role of Partner Sought**

The company is looking for experienced industrial partners involved in liquid waste treatment solution to establish technical cooperation with commercial agreement to implement the technology in question.

**Type of Partnership Considered**

Commercial agreement with technical assistance

## Technology Offer

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# Physical separation of gold and other metal particles by dielectrophoresis

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## Summary

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*A German university has developed a new method able to separate gold or other metal particles from a mixture of particles by applying dielectrophoresis. The new method considerably reduces the amounts of chemicals that need to be applied and leads to significant cost savings. The university is looking for industrial partners willing to license the technology or to reach a technical cooperation agreement to further develop the technology.*

<b>Creation Date</b>	22 August 2016
<b>Last Update</b>	12 September 2016
<b>Expiration Date</b>	12 September 2017
<b>Reference</b>	TODE20160822001
<b>Profile link</b>	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/045c2f09-1509-4e0a-9054-3d008471d84a">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/045c2f09-1509-4e0a-9054-3d008471d84a</a>

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## Details

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### Description

At present, cyanide leaching is the method which is most often applied to extract gold from ores. On average, 150 tons of cyanide are needed for each ton of gold. It is estimated that 182,000 tons of cyanide are used worldwide each year which, despite subsequent treatment, are often released into the environment without restraint.

Apart from the high environmental impact, the costs for this procedure are immense: €300,000 per ton gold are attributable to the cyanide. In addition, there are other chemicals as well as the costs for maintaining environmental specifications. This means incurring costs ranging from €500.000 to €1.000.000 euros per ton of gold.

The invention of the German university consists of a plant and a procedure for separating gold or other metal particles from a mixture of particles by applying dielectrophoresis. The physical separation method specifically separates precious metals, e.g. gold, from a suspension. This is accomplished by a special configuration of electrodes allowing for the creation of an electric field which is selective to metallic particles.

The new method replaces environmentally hazardous cyanide leaching almost completely and thus considerably reduces the amounts of the chemicals that need to be applied. Depending on the given environmental specifications, cost savings amount to at least €500.000 per each ton of gold. This stands in contrast to investment costs of approx. 20 million euros per mine.

Depending on the output and the gold content, an amortization period of about five years may be expected. The method is also suited for the extraction of other metals or for recycling metals from material mixtures, for example, electronic waste materials.

The researchers from the university are now looking for companies that are interested in licensing agreements as well as technical cooperation agreements to further develop this technology.

## Advantages and Innovations

- Reduction of processing costs for separating gold or other metals
- Saving considerable amounts of chemicals contaminating the environment
- Better workplace conditions by restricting methods hazardous to human health
- Economically exploitable amounts of gold can also be obtained from the material of previous excavations (up to 1g gold per ton rocks suspension)

## Stage of Development

Under development/lab tested

## Comments Regarding Stage of Development

The feasibility of the method has already been demonstrated in the laboratory. As the components of the plant are essentially all available on the market, a demonstration plant can be built in the short term. The dimensions of the plant and thus its throughput rate can be almost freely selected by applying a numbering-up process.

## IPR Status

Patents granted

## Comment Regarding IPR status

Patent is granted in Germany  
Further patents are currently being applied for in China and Australia

## Profile Origin

Other

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## Keywords

### Technology

02007009	Materials Handling Technology (solids, fluids, gases)
02007010	Metals and Alloys
10002013	Clean Production / Green Technologies

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**Open for EOI :**   **Yes**

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## Dissemination

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### Send to Sector Group

Bio Chem Tech

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## Client

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### Type and Size of Organisation Behind the Profile

University

### Year Established

1996

### Already Engaged in Trans-National Cooperation

Yes

### Languages Spoken

English

German

### Client Country

Germany

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## Partner Sought

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### Type and Role of Partner Sought

Cooperation Partners, e. g. companies, with experience in mining, separation of scrap metal

Task to be performed: Industrial scaling of the technology and adaptation to specific needs.  
Furthermore, industrial companies that are interested in licensing the technology are sought.

### Type and Size of Partner Sought

SME 51-250

### Type of Partnership Considered

License agreement



Technical cooperation agreement

## Technology Offer

### Optical sorting solutions for waste recycling

#### Summary

*A French SME has developed and manufactures optical sorting equipments for the recycling industries. The company is looking for partners for a commercial agreement with technical assistance, or a technical cooperation agreement to answer sorting and recycling centers or companies needs*

<b>Creation Date</b>	13 September 2016
<b>Last Update</b>	19 September 2016
<b>Expiration Date</b>	19 September 2017
<b>Reference</b>	TOFR20160913001
<b>Profile link</b>	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/1a9750cc-cb5d-4400-8dfa-18833ce394e4">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/1a9750cc-cb5d-4400-8dfa-18833ce394e4</a>

#### Details

##### Description

The french company develops optical sorting machines for household and industrial wastes. The technologies used to sort these materials are infrared spectrometry, visible spectrometry, x-ray transmission and inductive sensing. These technologies have been used and tested all over the world for a variety of demanding applications.

The company is also actively developing new sorting solutions for the single stream recycling. The combination and use of these technologies allow the company to sort all kind of waste : metals, papers, plastics, e-waste, organic, wood, packaging materials, etc.

The company is looking for partners for a commercial agreement with technical assistance, or a technical cooperation agreement.

It will develop with its partners innovative and high performance solutions for waste sorting. The French company also offers technical support for how to integrate optical sorting into new or existing lines and is willing to train the partner's technicians on how to use and maintain the equipment.

The French company headquarters are located in the South of France with a team of 133 people. Offices are also located in Japan and North America with their own full service and sales teams.

With solid growth and stable ownership, the SME continues to build up by investing the major part of their profits in R&D and Services. For instance, more than one third of their staff is working on tomorrow's solutions.

The company delivers worldwide high quality service and expertise on the field.

##### Advantages and Innovations

Sorting can be done on materials between 10mm – 400mm.

Material sorting with Near Infra-Red (NIR) Spectrometry

Color sorting with Vision Spectrometry  
Metal sorting with Induction Sensor

Advantages :

50% less maintenance time and costs than competitors machines.

Better detection systems with stronger spectrometers and better stability with the 2G architecture.

With over 1,200 machines in more than 40 countries, the company benefits from local teams specially dedicated to the clients satisfaction. The sales and customers teams support their partners with specific expertise to optimize their sorting line. A hotline responds 24/7 and the service engineers travel worldwide to guarantee the highest level of performance and availability. It offers technical guidance with project managers, engineers, and designers who work alongside their partner to maximize use of its machines and to get the most value out of their materials.

Based on proprietary R&D and «Made in France» manufacturing, the company offers equipment that is robust and easy-to- use. All equipment is designed, assembled and tested in the company's premises. With its integrated R&D and in-house manufacturing, the SME manages the entire value chain.

The company has established strong partnerships with renowned research laboratories, key international technology suppliers and works closely with the main plant builders of the market.

## Stage of Development

Already on the market

## Comments Regarding Stage of Development

Over 1200 machines in 40 different countries.

## IPR Status

Patents granted

## Comment Regarding IPR status

The company has developed and manufactured its own NIR spectrometers that are unique on the market.

Many patents have been filed in the field of spectrometry: they constitute the basis of the company's technology.

## Profile Origin

Private (in-house) research

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## Keywords

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### Technology

01003012	Imaging, Image Processing, Pattern Recognition
05003002	Optics
10002007	Environmental Engineering / Technology
10003004	Recycling, Recovery

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## Network Contact

---

### Issuing Partner

AGENCIA ANDALUZA DEL CONOCIMIENTO

### Contact Person

Rocio Muñoz Maestre

### Email

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**Open for EOI :**   **Yes**

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## Dissemination

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### Send to Sector Group

Environment

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## Client

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### Type and Size of Organisation Behind the Profile

Industry SME 50-249

### Year Established

2001

### Turnover

20 - 50M

### Already Engaged in Trans-National Cooperation

Yes

### Certification Standards

ISO 9001

ISO 14001

OHSAS 18001

### Languages Spoken

English

German  
French  
Japanese  
Portuguese  
Spanish  
Italian

## Client Country

France

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## Partner Sought

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### Type and Role of Partner Sought

The company is looking for partners in all recycling industries worldwide for a commercial agreement with technical assistance, or a technical cooperation agreement to answer sorting and recycling centers needs

Type of partners : sorting and recycling companies, sorting centers including SMEs and large waste companies in need of optical sorting. Partners can be handling as little as 3-5 tons per hour of materials or as large as 100 tons/hour and beyond.

The French company will support its partners in the development of robust, innovative, high performance solutions for new projects and the enhancement of performances at existing sorting and recycling centers. The French company offers technical support for how to integrate optical sorting into new or existing lines.

### Type and Size of Partner Sought

SME 11-50, SME <10,251-500, SME 51-250, >500

### Type of Partnership Considered

Commercial agreement with technical assistance  
Technical cooperation agreement

## Technology Offer

### Low-cost renaturation of industrial areas

#### Summary

*A German SME from the machine tools sector has developed a low-cost fibre spraying module for horticulture, landscaping and renaturation working in three steps: Mixing - wetting - blowdown of the fibres onto the requested surface. Substrates are sprayed on the soil via a patented procedure. The company seeks industrial partners to find out new application fields for a commercial agreement with technical assistance or a technical cooperation agreement.*

<b>Creation Date</b>	23 August 2016
<b>Last Update</b>	09 September 2016
<b>Expiration Date</b>	09 September 2017
<b>Reference</b>	TODE20160804001
<b>Profile link</b>	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/8e1b62e1-36e6-4448-ba01-ae2833dd0ba9">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/8e1b62e1-36e6-4448-ba01-ae2833dd0ba9</a>

#### Details

##### Description

The German medium-sized enterprise from the machine tools sector with longterm experience in environmental engineering has developed a low-cost technology for horticulture, landscaping and renaturation.

The fibre-spraying module consists of three components: Generator, water tank and fibre spraying machine. Processing steps are mixing, wetting and blow-down of the individual requested substrates. These substrates are produced considering ecological conditions and customer's wishes.

Fields of application

- spray vegetation
- roof vegetation
- flank vegetation
- erosion protection
- tree and planting disks
- mats

A wide range of application are possible, e.g. substrate for sod mats or substrate for plastic honeycomb slabs.

The company seeks industrial partners to find out new application fields and/or testing the existing technology in the frame of a commercial agreement with technical assistance or a technical cooperation agreement.

##### Advantages and Innovations

- high water storage capacity
- favourable heat storage value (temperature equalization between day and night)

- substrates can be sprayed on the soil by means of a patented method
- continuous humus layer with an inherent ecology
- air-borne fibrous webs are open for diffusion
- spraying method activates fibre-specific binding powers
- high erosion resistance against wind and water
- high water-binding capacity and optimum evaporation
- direct ground adherence due to fibrous surface
- adaptation for rooting possible
- seeding establishment protection offering no hollow spaces between ground and substrate which could be used by rodents
- retards natural soil evaporation

## Stage of Development

Already on the market

## IPR Status

Secret Know-how

## Profile Origin

Private (in-house) research

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## Keywords

### Technology

02002012	Mixing (powder, etc.), separation (sorting, filtering)
07001001	Agriculture Machinery / Technology
07001005	Horticulture
07001008	Seed coating
10002011	Soil and Groundwater Pollution

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## Network Contact

### Issuing Partner

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### Contact Person

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### Email

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---

**Open for EOI :**    **Yes**

## Dissemination

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### Send to Sector Group

Environment

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## Client

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### Type and Size of Organisation Behind the Profile

Industry SME 50-249

### Year Established

1989

### Turnover

1 - 10M

### Already Engaged in Trans-National Cooperation

Yes

### Languages Spoken

German

### Client Country

Germany

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## Partner Sought

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### Type and Role of Partner Sought

The company is looking for partners from the industry for testing existing or new applications of the technology.

Partners from the building sector and horticulture, landscape designer and experts from renaturation are highly welcome.

### Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

### Type of Partnership Considered

Commercial agreement with technical assistance

Technical cooperation agreement

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## Attachments

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industrial area\_May.JPG





industrial area\_July.JPG



## Technology Offer

# Immobilization of contaminants and sealing of rock by using time dependent crystallization – Provoked mineral synthesis

## Summary

*A German SME offers grouting solutions for water inflow stops/ sealing of rock and decontamination in mining industry. Using super saturated solutions is possible to precipitate natural occurring minerals, which reduce permeability of rock. The decontaminating metals can be fixed as sulphides and will remain in-situ. The SME is looking for partners from industry and research for a research cooperation agreement, technical cooperation, and/or a services agreement.*

Creation Date	23 August 2016
Last Update	07 September 2016
Expiration Date	07 September 2017
Reference	TODE20160805001
Profile link	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/5e1bcdcf-a6d1-467e-a945-07a089b2c794">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/5e1bcdcf-a6d1-467e-a945-07a089b2c794</a>

## Details

### Description

The German SME was founded 2003 and consists of a team of chemists, laboratory technicians and geotechnical engineers. It offering the application of the technology “provoked mineral synthesis” for solving geotechnical tasks as well as for immobilization of contaminants. This will include the adjustment of the composition to the defined conditions as well as the set up and if needed operating the plant for preparation and grouting of the solutions.

The offered “provoked mineral synthesis” is a new technology, which forms slightly soluble minerals from supersaturated solutions allowing the fixation of contaminants and the reduction of the permeability of soils or rock formations. Solutions containing high amounts of calcium sulphate, calcium carbonate or calcium hydroxide can be prepared by using special inhibitors, which prevent spontaneous crystallisation during the solution preparation. Inhibitors do not change the solubility, they stabilise temporarily concentrations high above the normal solubility of the minerals. Inhibitors enable, for example, the mixing of BaCl<sub>2</sub> and Na<sub>2</sub>SO<sub>4</sub> solutions as well as lime Ca(OH)<sub>2</sub> slurries and diluted sulphuric acid without spontaneous BaSO<sub>4</sub> and gypsum formation, respectively. Clear solutions are obtained with time dependent stability. The rate of precipitation can be directed by the degree of supersaturating, pH, temperature and type and concentration of the inhibitor. When supersaturated solutions are used as grout, time dependent crystallisation occurs within the penetrated soil or rock structures. The flow paths are closed systematic starting from the inner part. Reduction of permeability starts and will finished with sealing of the pore space or the crack. Contaminants are incorporated into the growing layers of slightly soluble minerals. Such processes can be used for preparation of solutions from which directed gypsum, anhydrite, BaSO<sub>4</sub>, CaCO<sub>3</sub> or Ca (OH)<sub>2</sub> formation takes place. All have

in common that the setup of supersaturating, pH value and redox potential opens many possibilities to change contaminants into stable, non-dissolvable compounds. Organic degradation processes can be initiated simultaneously. One main fact is the formation of only naturally occurring minerals, which do not harm the treated formations. Lab scale tested and field scale application has been successfully used several times, e.g. in Germany and Canada.

The company is looking for partners from industry for a license agreement, to transfer the rights to interested clients. Research institutions for a joint development for new solutions in this field are also highly welcome. Possible frame could build a technical cooperation and/or a research cooperation agreement. Especially for partners from the mining industry, e.g. owner of potash mining, the company can offer its specific technological knowhow.

## Advantages and Innovations

- sustainable, natural existing minerals are formed, no artificial materials needed;
- reduction of the permeability of soils or rock formations;
- fixation of contaminants ensured;
- special inhibitors are used to prevent spontaneous crystallisation (temporarily stabilised concentrations high above the normal solubility);
- in-situ treatment method

## Stage of Development

Already on the market

## IPR Status

Secret Know-how

## Profile Origin

Private (in-house) research

## Keywords

### Technology

03008	Mining Technologies
05001003	Inorganic Chemistry
09001002	Analyses / Test Facilities and Methods
10002007	Environmental Engineering / Technology
10002011	Soil and Groundwater Pollution

## Network Contact

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**Issuing Partner**

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**Contact Person**

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**Open for EOI :**   **Yes**

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**Dissemination****Send to Sector Group**

Bio Chem Tech

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**Client****Type and Size of Organisation Behind the Profile**

R&D Institution

**Year Established**

2003

**Turnover**

<1M

**Already Engaged in Trans-National Cooperation**

Yes

**Experience Comments**

References of the successful application of the technology exist for sealing of brine leakages in potash mines operated by a German company and a Canadian company, too.

**Languages Spoken**

English  
German

**Client Country**

Germany

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**Partner Sought**

## Type and Role of Partner Sought

The company is looking for partners from industry and research. For reason of the very wide application fields, there is no restriction with regard to the sectors. Highly welcome are industry partners in the fields of chemistry, mining, remediation, material science.

Role of the partner:

- transfer of the offered technology and/or knowhow
- joint development for new solutions/ applications

## Type and Size of Partner Sought

SME 11-50, University, R&D Institution, SME <10, >500 MNE, 251-500, SME 51-250, >500

## Type of Partnership Considered

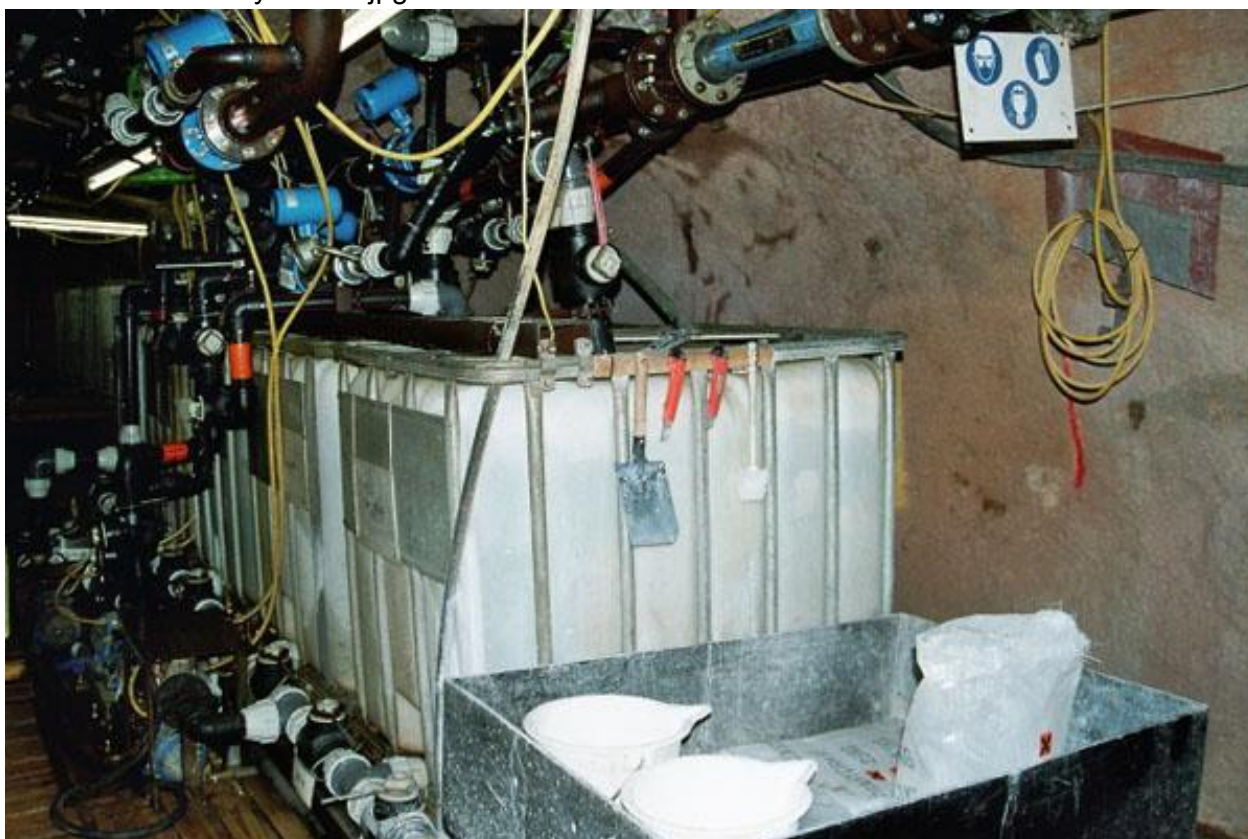
Services agreement

Technical cooperation agreement

Research cooperation agreement

## Attachments

Provoked Mineral Synthesis.jpg



## Technology Request

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# Seeking technology provider for development of river waste removal prototype

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## Summary

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*A UK company in the waste and environmental management sector is seeking a partner to provide technological support to develop a prototype that removes waste and debris from rivers. If left uncollected, waste and debris can cause problems such as pollution and flooding. The company aims to develop a system for addressing this issue and is looking for a partner to provide technical cooperation and/or a research or commercial agreement to assist in the development of a prototype.*

<b>Creation Date</b>	28 July 2016
<b>Last Update</b>	07 September 2016
<b>Expiration Date</b>	07 September 2017
<b>Reference</b>	TRUK20160728001
<b>Profile link</b>	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/f1746301-91e0-44e2-b77a-d535a1d29ffb">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/f1746301-91e0-44e2-b77a-d535a1d29ffb</a>

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## Details

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### Description

Floating waste in rivers is a growing environmental concern for water resource management, and many cities and regions are seeking solutions. The UK company has wide experience in developing innovative solutions and undertaking research in both the waste management and environmental sectors. It provides consultancy and assistance to waste management sector companies and the public sector at various levels of company organisation from technical to strategical.

The company has developed a solution that will address the problem of removing floating waste and debris in rivers. Debris could consist of material from natural origin such as logs or be of an artificial nature. The solution aims to be applicable in a variety of different scenarios where debris can cause pollution problems or a flooding risk.

The solution is currently being researched and designed. Scientific collaboration is currently being provided by an academic research centre active in waste management, hydrology and the water management field.

The desired outcome of an international partnership will be the development and validation of a prototype.

The company is interested in the following types of partnership:

- Commercial agreement with technical assistance: to support the engineering and construction of the prototype
- Research cooperation agreement: to contribute to the feasibility study
- Technical cooperation agreement: to further develop the design of the prototype

## Technical Specification or Expertise Sought

The technological idea that will deal with the issue of river waste and debris has been developed. The partner should be able to supply the technology and technical assistance to aid in the realisation of this project. The partner will have the necessary flexibility to adapt their expertise and technologies to the specific issue in order to implement the best solution.

The ideal partner should have one or more of the following:

- the capability to develop the design and the calculations for allowing the feasibility study
- engineering capabilities; civil engineers, hydraulic engineers, environmental engineers or mechanical engineers
- the technical capability to physically build the prototype

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## Keywords

### Technology

10002007	Environmental Engineering / Technology
10002011	Soil and Groundwater Pollution
10004	Water Management
10004008	Water Resources Management
10004011	Flood Management

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## Network Contact

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**Open for EOI :**    **Yes**

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## Dissemination

### Send to Sector Group

Environment



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## Client

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### Type and Size of Organisation Behind the Profile

Industry SME 11-49

### Year Established

2002

### Already Engaged in Trans-National Cooperation

Yes

### Languages Spoken

English

### Client Country

United Kingdom

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## Partner Sought

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### Type and Role of Partner Sought

Industrial, academic or research organisations currently operating in the marine waste collection sector or that would be able to provide technical support to assist in the development of a prototype are sought. The cooperation can be either technical cooperation, commercial assistance or a research agreement.

### Type of Partnership Considered

Commercial agreement with technical assistance  
Technical cooperation agreement  
Research cooperation agreement



***Medio Ambiente:  
Agua y Residuos***

## Research & Development Request

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### **CIRC-01-2016-2017: German consortium initiating a project for the reuse, recycling a recovery of old buildings is looking for research cooperation partners active in the construction sector who can offer technical know-how**

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#### Summary

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*A German university chair of management accounting is setting up a consortium for the call CIRC-01-2016-2017. The aim of the project is to develop new processes in order to use old buildings as a resource pool for materials. The consortium is looking for companies and research institutions active in the constructions sector having expertise with reuse, recycling or recovery technologies. Research cooperation agreements are sought.*

Creation Date	30 August 2016
Last Update	06 October 2016
Expiration Date	05 September 2017
Reference	RDDE20160829001
Profile link	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/6e8ed877-893a-409a-8694-30b577e26572">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/6e8ed877-893a-409a-8694-30b577e26572</a>

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#### Details

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##### Description

The chair of management accounting at a German university is looking for research cooperation partners complementing the consortium for a project in Horizon 2020 CIRC-01-2016-2017 (IA).

The aim of the proposed project is the development of an innovative recycling economy in construction, which will replace the existing linear business models, ensuring sustainable growth and thus makes a significant contribution to improving resource efficiency in the sector. The idea of the project application is to use old buildings as a resource pool, rather than completely demolish and treat as waste. New, sustainable processes have to be designed to easily separate the old building material. In addition, new technologies have to be developed to prepare the recovered building materials and to ensure a required quality, which is documented consistently.

The project is in the conception stage. Until now, the consortium consists of the German university as well as of a German institution specialised on textile technologies. Within the project, the German university would face up with the controlling of the value part while the institution offers its expertise on textile construction. Furthermore, the German university has already contacted a Danish technological institute to coordinate the project. Further companies

and institutions have also been requested to participate in the project.

In order to complement the consortium, the company is looking for industrial or research partners having technical know-how in the area “treatment, recovery and recycling technologies”, “prefabricated elements and retrofitting solutions” and/or “circular value chain” and might be active in the construction sector or other related divisions.

The research partners could be a university or research institution supporting the consortium in the context of research activities in fields of waste management or materials science in construction.

The industrial partners could be a company that conducts test and validations within the scope of application. The industrial partner could be a company related to the construction waste like recycling companies, a material supplier in the construction sector (e.g. chemicals or plastics) or a building constructor (including R&D activities).

Research cooperation agreements are sought.

Call: CIRC-01-2016-2017: Systemic, eco-innovative approaches for the circular economy: large-scale demonstration projects, deadline: 07 March 2017, The German Chair would like to conduct a workshop with all potential partners of the consortium in October 2016. Hence, expressions of interest (EoIs) can be submitted until 30th September. In case further partners are needed in order to complete the consortium the second deadline for EoIs is the 31st December.

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## Network Contact

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### Issuing Partner

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**Open for EOI :**    **No**

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## Dissemination

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### Send to Sector Group

Materials

## Client

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### Type and Size of Organisation Behind the Profile

University

### Year Established

0

### Already Engaged in Trans-National Cooperation

Yes

### Languages Spoken

English

German

### Client Country

Germany

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## Partner Sought

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### Type and Role of Partner Sought

The German university is looking for research cooperation partners to complete the consortium.

The industrial and research partners might be active in the construction sector and should have expertise in one or more of these specific areas:

- treatment, recovery and recycling technologies
- prefabricated elements and retrofitting solutions
- circular value chain

The industrial partners could

- be SMEs and large companies conducting tests and validations within the scope of application
- be a company related to the construction waste like recycling companies
- be a material supplier in the construction sector (e.g. chemicals or plastics)
- be a building constructor (including R&D activities)

The research partners could

- be universities and other institutions responsible for research activities within the project
- be active in fields of waste management or materials science in construction

### Type and Size of Partner Sought

SME 11-50, University, R&D Institution, SME <10, >500 MNE, 251-500, SME 51-250, >500

### Type of Partnership Considered

Research cooperation agreement

## Technology Offer

### Multi-shredder for all materials reducing garbage volume

#### Summary

*A German SME offers a variety of services in the field of waste management and waste disposal. The SME developed a shredding machine suitable for all kinds of recyclable materials. The shredded material reduces the waste volume drastically. The SME is looking for cooperation partners who are interested in producing and commercially launching the device within the framework of a manufacturing agreement and a commercial agreement with technical assistance.*

<b>Creation Date</b>	14 September 2016
<b>Last Update</b>	20 September 2016
<b>Expiration Date</b>	20 September 2017
<b>Reference</b>	TODE20160913001
<b>Profile link</b>	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/dd5546a2-c3ef-424c-b49d-c637ede00f46">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/dd5546a2-c3ef-424c-b49d-c637ede00f46</a>

#### Details

##### Description

A German SME is a service provider for municipalities and households and provides waste management systems. The company has developed a mobile shredding machine that allows for the disintegration of all kinds of recyclable packaging products such as cans, bottles or foils made of a wide range of materials. Even shredding smart phones or tablets is possible. In this shredded state, the waste volume is drastically reduced to a fraction of its previous volume. Since the shredder operates on a rotationfree mechanism, it prevents material winding. Through reversing machine cutting tools, jams and stuck materials can be avoided. The materials feed operates automatically via the (direction of) movement of the cutting tools.

Due to the use of abrasion-resistant steel with a hardness of 6000 HBM the wear is very low. The machine is equipped with an intelligent controller device. The potential cooperation partner should carry over the existing shredder prototype into serial production and commercially launch the product. The German SME is looking for manufacturing agreements and commercial cooperations with technical assistance.

##### Advantages and Innovations

- Waste disposal intervals can be extended which reduces costs for waste storage.
- The type and specific construction of the cutting tools allow for reduced maintenance efforts.
- Quick and easy replacement of components due to modular design

##### Stage of Development

Available for demonstration

##### IPR Status

Patents granted

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## Profile Origin

Private (in-house) research

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## Network Contact

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### Issuing Partner

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**Open for EOI :**    **Yes**

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## Client

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### Type and Size of Organisation Behind the Profile

Industry SME 11-49

### Year Established

2003

### Turnover

1 - 10M

### Already Engaged in Trans-National Cooperation

No.

### Languages Spoken

English  
German

### Client Country

Germany

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## Partner Sought

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## **Type and Role of Partner Sought**

- Type of organisation: industry
- Fields of activity of partner sought:  
Manufacturer of recycling equipment
- Task to be performed by partner sought (what is expected?):  
Manufacturing of the product and commercial agreement

## **Type and Size of Partner Sought**

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

## **Type of Partnership Considered**

Manufacturing agreement  
Commercial agreement with technical assistance



## Technology Offer

# Used Industrial Oils Regeneration Technology Boosting Circular Economy

## Summary

*A Czech SME active in ecology and recycling of waste has developed cost efficient technology for regeneration of used industrial oils. The technology is 4 - 5 times cheaper at regenerating oil compared with currently known methods, is TUV certified and complies with relevant EU standards. The regeneration unit is available both in stationary and mobile versions. The company is looking for operators of machinery or recycling companies for commercial agreements with technical assistance.*

<b>Creation Date</b>	13 September 2016
<b>Last Update</b>	14 September 2016
<b>Expiration Date</b>	14 September 2017
<b>Reference</b>	TOCZ20160905001
<b>Profile link</b>	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/eac5d2bd-c06b-45f9-84d5-f90d7c646dd1">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/eac5d2bd-c06b-45f9-84d5-f90d7c646dd1</a>

## Details

### Description

Used oils are waste material which belongs to hazardous waste. In larger quantities (approx from 0.5 tons) they are bought as a secondary raw material and due to their very low price they are usually used as "energy oils" mainly in combustion (in metallurgical industry, cement industry, local special furnaces). Nevertheless combustion is a very inefficient way of utilizing this valuable material. There are several known methods, e.g. regeneration via refining process in a refinery but they are expensive, which means that commercial efficiency is about zero or even a loss. Using this technology it is possible to regenerate used industrial oils repeatedly.

This very progressive method is 4 – 5 times cheaper and offers profitability. Its return on investment is about 2 years depending on actual conditions in a particular country, e.g. different purchase prices of used oils.

The company developed this regeneration technology in collaboration with its daughter company. The technology is able to regenerate oils from production processes:

- Transformer oil
- Turbine oil
- Hydraulic oils
- Engine (motor) oil

The device is manufactured both in a stationary and mobile version. The regeneration device comprises of two containers which are after their bringing to the operation place put together into a prescribed position and secured with couplings. Other operation units as a bentonite bin, oil tanks, storage space for chemicals and waste storage are placed according to local

conditions. Connection to the local power grid can be solved either by a flexible cord or by setting up a temporary connection point in the close proximity of the containers.

The technology is fully automated and manufactured in compliance with relevant EU standards, and TUV certified. One device is profitably operated within the company's own used oils regeneration operation. Commercial agreement with technical assistance as a way of partnership has been chosen as the company would like to find partners for transferring know how (knowledge of the technological process), provision of assembly of the device and training the staff at the client company. The companies searched for are operators of machinery or companies active in the recycling and regeneration of used oils. Interested companies are invited to the Czech Republic to bring a sample of their used oil to practically verify the method on the existing innovative regeneration device.

## Advantages and Innovations

- Both stationary and mobile version of the device is available
- As opposed to other technologies this one combines lower energy demands together with the reduced legislative burden required for its launch due to homologation as a "mobile" device.
- Significantly cheaper way of used oils regeneration (4 to 5 times cheaper) compared to existing methods
- The technology complies with the EU Action Plan for the Circular Economy bringing benefits for both the environment and the economy.

## Stage of Development

Already on the market

## IPR Status

Secret Know-how

## Profile Origin

Private (in-house) research

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## Network Contact

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### Issuing Partner

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---

**Open for EOI :**    **Yes**

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## Client

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### Type and Size of Organisation Behind the Profile

Industry SME 11-49

### Year Established

2003

### Turnover

<1M

### Already Engaged in Trans-National Cooperation

Yes

### Languages Spoken

English

### Client Country

Czech Republic

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## Partner Sought

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### Type and Role of Partner Sought

Type of partner sought:

Industry, Recycling

Industrial companies - operators of machinery (turbines, transformers, hydraulic systems, motors)

Recycling companies - companies providing recycling and regeneration of industrial oils with regard to the Circular Economy

Role of partner sought:

Implementing the technology in machine operations; acquisition of the technology for the purpose of providing profitable recycling and regeneration services.

### Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

### Type of Partnership Considered

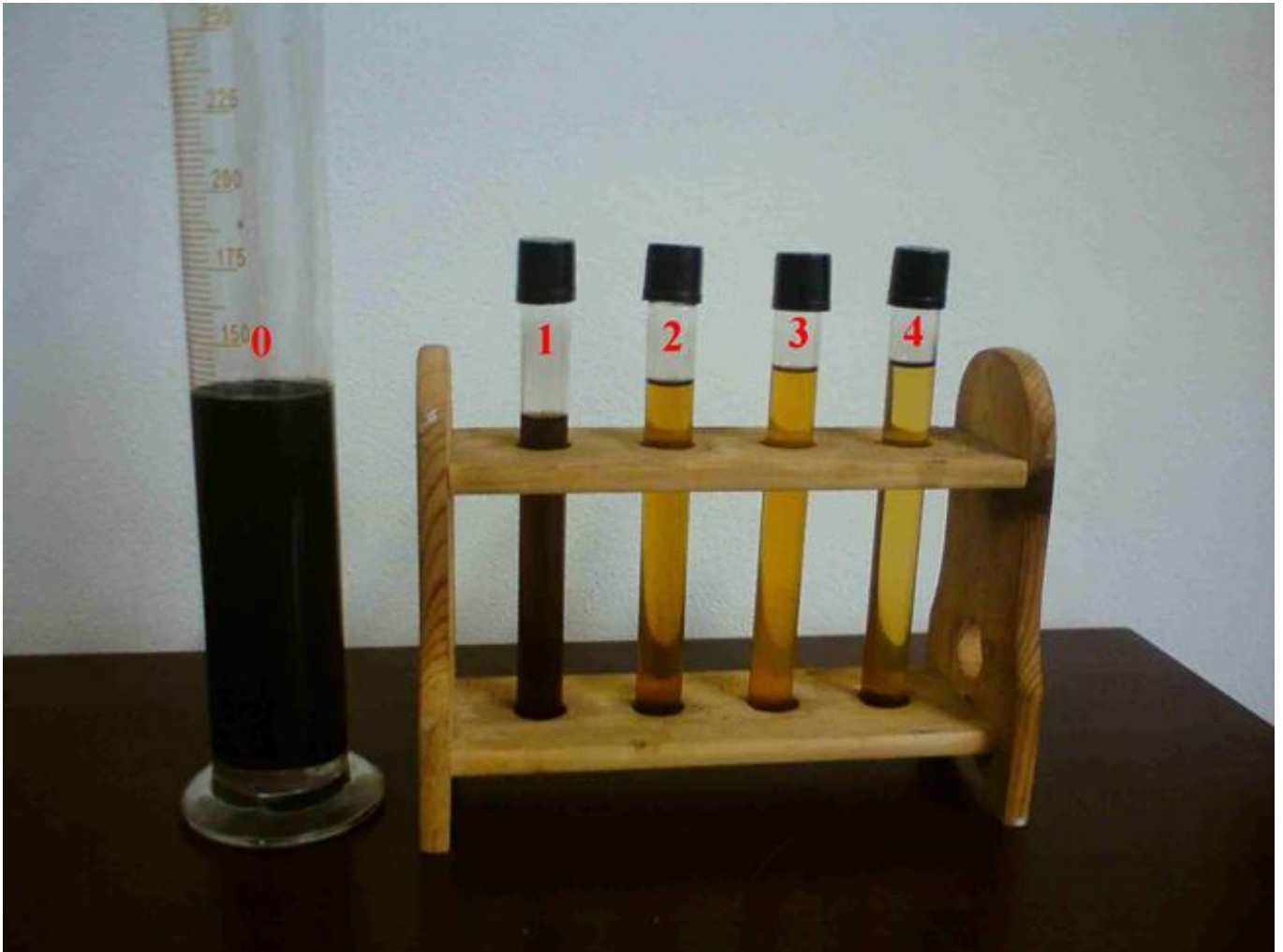
Commercial agreement with technical assistance

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## Attachments

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Oil purification.jpg



## Technology Offer

# Technology of treating unsegregated municipal waste with full recovery of secondary raw materials

## Summary

*A Polish company active in waste treatment technologies has developed new technology of treating unsegregated municipal waste with full recovery of secondary raw materials. It doesn't require separate collection at source. It ensures full materials recovery from waste, full waste diversion from landfills, odours elimination and 65% waste recycling level. The company is searching partners for commercial agreement with technical assistance.*

<b>Creation Date</b>	19 September 2016
<b>Last Update</b>	26 September 2016
<b>Expiration Date</b>	26 September 2017
<b>Reference</b>	TOPL20160919001
<b>Profile link</b>	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/4e6f55dc-d0c2-465f-833a-c7060e6227c6">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/4e6f55dc-d0c2-465f-833a-c7060e6227c6</a>

## Details

### Description

A Polish company which invests in processing municipal waste and the complete recycling of reusable materials which eliminates the problem of waste storage has developed a technology of mechanical – heat treatment of waste. It is based on waste sterilization and its automatic, mechanical segregation. It doesn't require separate collection at source. It ensures full materials recovery from waste, full waste diversion from landfills (less than 4% waste disposal), odours elimination and 65% waste recycling level, which means fulfilling all the existing and planned EU requirements for waste management.

Offered technology is a complete system of waste treatment and recovery, organized within one facility receiving mixed municipal solid waste. In the first stage, waste is sterilized (heat treatment lasts ca. 3hours), which is to eliminate microorganisms responsible for odour nuisance of waste. In addition to that, sterilization provides loss of moisture, therefore waste volume is reduced (by 60-80%), as well as its viscosity, and it is easy to be segregated automatically. In the second stage, waste is mechanically segregated and the following fractions are separated: clean secondary raw materials: glass, plastics (divided to different fractions), ferrous and non-ferrous metals, moreover biomass that can be used as a green fuel or as fertilizer and fractions intended to produce alternative fuel (SRF). Over 65% of waste is recovered for recycling, some is used as fuel for energy production and less than 4% is disposed on landfills.

The company's offer includes building new waste treatment facilities equipped with mechanical – heat treatment technology or modernization of existing sorting plants, as well as technical and designing support in the organization of the waste collection and management system. They are looking for waste owners (local governments, companies, sorting plants owners), interested in

implementing effective and environmentally friendly waste management system. They are ready to sign commercial agreements with technical assistance.

## Advantages and Innovations

- Offered technology allows to simplify and significantly reduce costs of waste collection system. Separate collection of waste by people can be completely eliminated.
- Technology allows to separate all the secondary raw materials from unsegregated waste (metals, plastics, glass), divided by colors and fractions – in fully automated process, with no human contact with waste
- Technology allows to recover and re-use clean organic fraction from waste
- Technology makes waste odourless and it causes no nuisance to environment
- Technology allows to almost completely eliminate landfilling (<4%)
- Technology allows to recycle min.65% of waste (fulfills planned EU requirements for 2030)

## Stage of Development

Already on the market

## IPR Status

Secret Know-how, Trade Marks, Exclusive Rights

## Profile Origin

Private (in-house) research

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## Network Contact

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### Issuing Partner

AGENCIA ANDALUZA DEL CONOCIMIENTO

### Contact Person

Rocio Muñoz Maestre

### Email

rocio.munoz.maestre@juntadeandalucia.es

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**Open for EOI :**    **Yes**

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## Dissemination

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### Send to Sector Group

Environment

## Client

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### Type and Size of Organisation Behind the Profile

Industry SME 11-49

### Year Established

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### Already Engaged in Trans-National Cooperation

Yes

### Languages Spoken

English

Polish

### Client Country

Poland

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## Partner Sought

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### Type and Role of Partner Sought

The company is ready to sign commercial agreements with technical assistance with waste owners: local governments, companies, waste treatment plants' operators which role will be providing the stream of municipal waste to be treated.

### Type and Size of Partner Sought

SME 11-50, SME <10, >500 MNE, 251-500, SME 51-250, >500

### Type of Partnership Considered

Commercial agreement with technical assistance

## Technology Offer

### Optical sorting solutions for waste recycling

#### Summary

*A French SME has developed and manufactures optical sorting equipments for the recycling industries. The company is looking for partners for a commercial agreement with technical assistance, or a technical cooperation agreement to answer sorting and recycling centers or companies needs*

<b>Creation Date</b>	13 September 2016
<b>Last Update</b>	19 September 2016
<b>Expiration Date</b>	19 September 2017
<b>Reference</b>	TOFR20160913001
<b>Profile link</b>	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/1a9750cc-cb5d-4400-8dfa-18833ce394e4">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/1a9750cc-cb5d-4400-8dfa-18833ce394e4</a>

#### Details

##### Description

The french company develops optical sorting machines for household and industrial wastes. The technologies used to sort these materials are infrared spectrometry, visible spectrometry, x-ray transmission and inductive sensing. These technologies have been used and tested all over the world for a variety of demanding applications.

The company is also actively developing new sorting solutions for the single stream recycling. The combination and use of these technologies allow the company to sort all kind of waste : metals, papers, plastics, e-waste, organic, wood, packaging materials, etc.

The company is looking for partners for a commercial agreement with technical assistance, or a technical cooperation agreement.

It will develop with its partners innovative and high performance solutions for waste sorting. The French company also offers technical support for how to integrate optical sorting into new or existing lines and is willing to train the partner's technicians on how to use and maintain the equipment.

The French company headquarters are located in the South of France with a team of 133 people. Offices are also located in Japan and North America with their own full service and sales teams.

With solid growth and stable ownership, the SME continues to build up by investing the major part of their profits in R&D and Services. For instance, more than one third of their staff is working on tomorrow's solutions.

The company delivers worldwide high quality service and expertise on the field.

##### Advantages and Innovations

Sorting can be done on materials between 10mm – 400mm.

Material sorting with Near Infra-Red (NIR) Spectrometry



Color sorting with Vision Spectrometry  
Metal sorting with Induction Sensor

Advantages :

50% less maintenance time and costs than competitors machines.

Better detection systems with stronger spectrometers and better stability with the 2G architecture.

With over 1,200 machines in more than 40 countries, the company benefits from local teams specially dedicated to the clients satisfaction. The sales and customers teams support their partners with specific expertise to optimize their sorting line. A hotline responds 24/7 and the service engineers travel worldwide to guarantee the highest level of performance and availability. It offers technical guidance with project managers, engineers, and designers who work alongside their partner to maximize use of its machines and to get the most value out of their materials.

Based on proprietary R&D and «Made in France» manufacturing, the company offers equipment that is robust and easy-to- use. All equipment is designed, assembled and tested in the company's premises. With its integrated R&D and in-house manufacturing, the SME manages the entire value chain.

The company has established strong partnerships with renowned research laboratories, key international technology suppliers and works closely with the main plant builders of the market.

## Stage of Development

Already on the market

## Comments Regarding Stage of Development

Over 1200 machines in 40 different countries.

## IPR Status

Patents granted

## Comment Regarding IPR status

The company has developed and manufactured its own NIR spectrometers that are unique on the market.

Many patents have been filed in the field of spectrometry: they constitute the basis of the company's technology.

## Profile Origin

Private (in-house) research

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## Network Contact

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### Issuing Partner

AGENCIA ANDALUZA DEL CONOCIMIENTO

### Contact Person

Rocio Muñoz Maestre

## Email

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**Open for EOI :**   **Yes**

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## Dissemination

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### Send to Sector Group

Environment

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## Client

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### Type and Size of Organisation Behind the Profile

Industry SME 50-249

### Year Established

2001

### Turnover

20 - 50M

### Already Engaged in Trans-National Cooperation

Yes

### Certification Standards

ISO 9001  
ISO 14001  
OHSAS 18001

### Languages Spoken

English  
German  
French  
Japanese  
Portuguese  
Spanish  
Italian

### Client Country

France

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## Partner Sought

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## **Type and Role of Partner Sought**

The company is looking for partners in all recycling industries worldwide for a commercial agreement with technical assistance, or a technical cooperation agreement to answer sorting and recycling centers needs

Type of partners : sorting and recycling companies, sorting centers including SMEs and large waste companies in need of optical sorting. Partners can be handling as little as 3-5 tons per hour of materials or as large as 100 tons/hour and beyond.

The French company will support its partners in the development of robust, innovative, high performance solutions for new projects and the enhancement of performances at existing sorting and recycling centers. The French company offers technical support for how to integrate optical sorting into new or existing lines.

## **Type and Size of Partner Sought**

SME 11-50, SME <10, 251-500, SME 51-250, >500

## **Type of Partnership Considered**

Commercial agreement with technical assistance  
Technical cooperation agreement

## Technology Offer

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# Oil separator of drilling emulsions and lubricants from metal processing

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## Summary

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*A German SME, active in the machine tools area, has developed a technology for on-site recycling of drilling emulsions and lubricants from metal processing. The separation of lubricants, emulsions, chips and metal sludge, respectively, is achieved by using a mobile, low-weight separator equipped with skimmers and pumps. The SME seeks partners from the industry for a commercial agreement with technical assistance or a technical cooperation agreement.*

<b>Creation Date</b>	10 August 2016
<b>Last Update</b>	13 September 2016
<b>Expiration Date</b>	13 September 2017
<b>Reference</b>	TODE20160801003
<b>Profile link</b>	<a href="http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/20def54d-5a85-4898-b259-253d84dbe0a6">http://een.ec.europa.eu/tools/services/PRO/Profile/Detail/20def54d-5a85-4898-b259-253d84dbe0a6</a>

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## Details

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### Description

The German company, active in Machine tools, was founded in 1945 and transferred to private ownership again after the political change in 1990; has been specializing in the field of environmental technology since the mid-nineties. This SME has its own design department, and is certified according to the DIN EN ISO 9001 standard. The company is experienced in all aspects of the machine tool development process - from project planning, design and manufacturing to final assembly.

The technology offered:

Metal processing needs lubrication. Drilling emulsions and lubricants are continuously fed through appropriate tubing to the tool, and recirculated internally for a certain period. During this recirculation process, oil and metal sludge accumulate in the liquids, making them no longer suitable for lubrication, thus giving rise to serious damage of the tools. The liquids have to be replaced from the circulation and pipes, and metal sludge has to be removed from the internal tank. According to the newly developed technology skimmers are used to take off the most polluted fraction of the liquids, i.e. the scum from the surface containing most of the organic pollutants as well as fine metal particles. This fraction is circulated through a mobile, low-weight external device that allows for the separation, by several physical principles, of both metal and organic waste from the liquids prior to recirculation. Circulation rates of typically between 20 and 200 dm<sup>3</sup> per hour are achieved. The lifetime of the emulsions and lubricants increases by at least 50%, thus saving time for complete removal of the used liquids from the internal tank and saving costs for the expensive emulsions and lubricants. Furthermore, owing to the density differences between waste oil, drilling emulsions, and metal chips and sludge, respectively, the metal waste is almost free of organic contaminants. This again will save costs for disposal and facilitates the fulfilment of legal requirements for environment, health, and safety.

The SME seeks partners from the industry, especially companies in the field of metal processing, interested in saving costs by improving the lifetime of their machine tools for a commercial agreement with technical assistance or a technical cooperation agreement.

## Advantages and Innovations

The additional circulation of the most contaminated portion of the lubricants and drilling emulsions through a low-weight, mobile separator is a surprisingly efficient means for extending the maintenance interval of the built-in lubrication of a machine tool.

- Saves time for liquid replacement from the internal tank, i.e., stand-by time of the machine tool, by extension of the liquids' lifetime.
- Saves costs for purchasing both lubricants and drilling emulsions (approximately 2.50 € per dm<sup>3</sup>) as well as for waste disposal.
- Decentralized separation of liquids to be re-circulated from pollutants.

## Stage of Development

Already on the market

## IPR Status

Secret Know-how

## Profile Origin

Private (in-house) research

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## Network Contact

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### Issuing Partner

AGENCIA ANDALUZA DEL CONOCIMIENTO

### Contact Person

Rocio Muñoz Maestre

### Email

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**Open for EOI :**    **Yes**

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## Client

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## Type and Size of Organisation Behind the Profile

Industry SME 50-249

## Year Established

1989

## Turnover

1 - 10M

## Already Engaged in Trans-National Cooperation

No.

## Languages Spoken

English

German

## Client Country

Germany

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## Partner Sought

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### Type and Role of Partner Sought

The company is looking for partners from industry, especially companies in the field of metal processing, interested in testing the recycling method, or interested in a further development to save costs by improving the lifetime of their machine tools.

In case of a commercial agreement, the technical assistance would include information and training, a technical cooperation agreement is also highly welcome.

### Type and Size of Partner Sought

SME 11-50, SME <10,>500 MNE, 251-500, SME 51-250, >500

### Type of Partnership Considered

Commercial agreement with technical assistance

Technical cooperation agreement

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## Attachments

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