

Recommendations for Partnership guidance / consultations

The document recommends collaboration between two partners. It aims to find a common technology to solve waste management and recycling.

Keywords: Commercialization, collaboration, common technology, knowledge transfer, possible match

Aims of this recommendation

The document recommends collaboration between two partners. It aims to find a common technology to solve waste management and recycling. The possible matches can do from searching in Ecolnn Virtual Lab. The partners can complete forms in the “offer” or in the “demand” category, so the profiles show both interests. Furthermore, the document shall raise interest among municipalities affected by heavy metal-pollution in lakes, ponds, etc.

Target group of this recommendation package

- Small and medium sized enterprises (SMEs)
- Research and development (R&D) institutions

Background to this recommendation package

As the general objective of the Ecolnn Danube project is to increase the cooperation of innovation actors in the field of eco-innovations with special emphasis on development and application of eco-technologies in the Danube Region, this recommendation represent useful suggestions and proposals to the target audience on this case how to resolve specific problem through forms of knowledge transfer.

This recommendation report has occurred, when the SMVKA was informed from current partner about the problem of waste management of tires. Due to EU policies and regulations are less accessible and understandable, so our recommendations also cover how partners align themselves to the many regulations.

Summary description

Agro Tyre Ltd has been dealing with tire trade / repair since 2011. The company are waiting for existing and prospective

Quick read

- Abandoned tires can cause severe environmental damage when released into nature
- Recommendations for common technology to solve waste management and recycling
- Problem of waste management of tires
- Rubbers returning into rubber production

customers with a wide range of new and used tires in online warehouse. Agro Tyre offer covers the entire tire range and deal with agriculture, cargo, off-road, loader, forklift, or personal tires, rim or hose. In assembly works they perform tire assembly, vulcanization, repair of side and tread injuries, wheel balancing of cars, cutting of tire tread and modification of truck rims. The company also have special presses and special tools for installing solid forklift trucks. Agro Tyres undertake to deliver free of charge agricultural and loading tires purchased from itself. Over 15 years of existence the company is constantly experiencing problems with the agricultural scrap tire; we have accumulated this type of tire for years.

Abandoned tires can cause severe environmental damage when released into nature. Due to the regulations, the worn tires are now taken back in several places, and their recycling is increasingly solved. Unfortunately, it is not yet mandatory to take over and is not necessarily free. Product fee payable by released: car tire: 1 Euro/piece, truck tire: 0,8 Euro/piece, bicycle: 0,4 Euro/piece. Agricultural tire (steel reinforced) is the only one whose adoption is not completely solved and causes problems.

Regulation of tire takeover and recycling:

Some industry players take over tires, even for free. According to the European Union Directive Directive 99/31 / EC since 1 July 2003 it is forbidden to discard waste tires in communal waste in Hungary. Responsibility for complying with the rules lies with the manufacturers and importers who have a duty to pay and use the product. Damaged tires can be delivered directly to a specialist service or their placement can be solved by the coordinating organizations. The role of coordinating organizations in non-profit form is to coordinate the activities of the actors involved in the system, and regulate their operation Waste Management Act form 2000 and 94/2002. government regulation. Joining to the coordinating organizations every year, more and more businesses have entered the national waste management system, for which it is intended recycling of as much waste as possible and fulfilling the recycling rates set by the EU for Hungary. Some local governments organize

tire collection action onetime in a year with one of the tire co-coordinating organizations; it is worth to be informed about it.

Ministry of Environment and Water encourages recycling of waste tires with a product fee system: Manufacturers and importers are exempted from the mandatory product fee if they are able to collect 75% of their imported quantities for recycling.

The Ministry of Innovation and Technology has prepared the National Collection and Exploitation Plan for 2019. The Ministry of Innovation and Technology, as a state organization for the management of waste organizes and manages domestic waste management for products subject to product charges. The plan includes tasks related to monitoring, collecting and pre-processing / utilizing the amount of waste generated from products covered by the Hungarian environmental product charge payment obligation for a full calendar year. The plan clearly demonstrates what waste management volumes are assigned by public waste management organizations for the given year.

Utilization of tires:

About half of the tire waste is recycled in its material, and the rubber is practically returned to rubber production. The rubber product is shredded and granulated from it, while the steel and textile fabrics in the tire are separated. Sifting granules are used as raw materials: for example, in the manufacture of lower quality rubber products, they are replaced by rubber, or the granules are mixed with glue and pressed into a sheet, of which rubber sheets, rubber blocks, tiles, such as sports fields and playgrounds are made. The other half of the waste can only be disposed of by energy recovery - in the case of particularly damaged and lost tires practically no other way than burning in cement plants. By burning tires with a calorific value similar to black coal, cement plants substitute primary oil derivatives. Pyrolysis is good because the rubbers are renewable and plant-based; oil obtained during pyrolysis takes oil refinery and blending into gas oil. The resulting product is an agrofuel component



About the Ecolnn Danube project

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and is a renewable energy source. Appropriate filtering equipment is required for authorization of the procedure.

So there are good solutions for waste management. It can be a very good partner with location in Pécs, near to head office of AgroTyre: Granuflex Ltd. The company was in 1993 established and has actually finished an investment for rubber waste processing production line. The new production line enables the utilization of 5000-6000 tons of waste tires per year, which leaves a much smaller ecological footprint compared to previous technologies.

Results of their developments are:

- high-purity rubber powder in sizes below 350 µm, which is also an important additive for the rubber industry



- steel chips can be used for further processing on the one hand for metallurgical purposes, on the other hand it can be used for concreting technology



- we would like to ensure the utilization of textile chips as additives as soon as possible.



Partnership brings together the knowledge and expertise of partner environmental R&D or, and knowledge and expertise of stakeholder in waste management. Planning and development to generate a scientific set of solutions in order to mitigate the environmental impact of recycling activity between the two areas.

In case if the partnership between the stakeholder with demand and the partner who brings eco-friendly technology cannot be established within the national boundary, the search and pitching should be promoted by looking for solution technology beyond the border. It is more important that the right partners find each other and discuss all of the needs and requirements.

To bring together an eco-knowledge of expert with a real current environmental problem to solve, it's necessary to cumulate all of aspects of both sides. The success of a pitching in the Eco Dabube region requires addressing not only the differences within the nation, but also the differences between the nations and the harmonization of the different legal regulations.

Summary of recommendation(s)

Waste management, including used tires was regulated in Hungary in a slowly process. According to the European Union Directive Directive 99/31 / EC since 1 July 2003 it is forbidden to discard waste tires in communal waste in Hungary. Many national laws and regulations also provide for certain rules for the recycling of waste tires. But it is even

About Ecolnn Danube recommendation packages

Recommendations in the context of the Ecolnn Danube project are useful suggestions and proposals on how to bring eco-solutions into commercial value, particularly through forms of knowledge transfer.

Recommendation packages relate to specific eco-solutions, specific problems or specific areas within technology transfer.

Partnership guidance recommendations aim to aid successful interaction between 2 or more specific demand and supply side stakeholders.

Pitch recommendations aim to aid successful knowledge transfer and/or commercialisation for a type of stakeholder.

Events, consultations and interactions recommendations aim to aid successful eco-knowledge transfer by focusing on a given issue, area or topic related to knowledge transfer.

more important to create a partnership where from demand side is waste management is has to solved and available a partner with already developed technology and knowledge transfer for recycling waste tires on the supply side. The virtual lab created within the Ecolnn project was created specifically for eco-innovation knowledge to bring together the demand and supply side.

List of useful links

T <https://agrotyre.hu/>

https://www.kormany.hu/download/c/2c/81000/OGyHT_2019%20v2.pdf

<https://net.jogtar.hu/jogszabaly?docid=A1400246.KOR>

<http://www.szelektivinfo.hu/iparfejlesztes/uj-uton-a-hazai-hulladekgazdalkodas/a-hazai-telepulesi-szilard-hulladekgazdalkodas-jogszabalyi-keretei>

<http://gumihasznosito.granuflex.hu/ceg%20bemutao.htm>

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