

Rail Sleepers - Green Rail Group

 GREEN RAIL GROUP SRL
Via G. Burando 39 – c/o Polihub –
20158 Milano
Via Belsiana 71, 00187 Roma ITALY
www.greenrailgroup.com



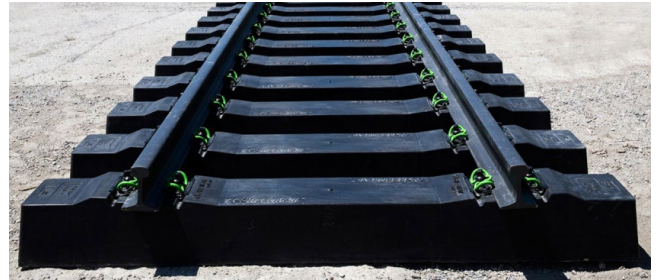
Firas Bunni – COO
Dawid Janik (communication manager)



firmas.bunni@greenrailgroup.com
dawid.janik@greenrailgroup.com



+39 391 703 78 14



© GREEN RAIL GROUP SRL

INFORMATION ON THE ECO-INNOVATIVE SOLUTION PROVIDER

Greenrail is an international company characterized by a great innovative drive, able to catalyze qualified interdisciplinary profiles and research centers, connected to each other and active in the design of technologically advanced solutions.

Greenrail handles the designing, prototyping, production and testing of its products, with a perspective of innovating the process, favoring the development of new and specific competences, thanks to the collaboration with universities, research centers and a network of authoritative partnerships, which allow an extraordinary opportunity for growth.

SHORT DESCRIPTION OF THE ECO-INNOVATIVE SOLUTION

Greenrail technology permits to produce a railway sleeper made of an inner core in reinforced concrete, and an outer shell obtained from a mix of rubber collected from end-of-life tires and recycled plastics, which poses an important contribution to the circularity concept of Green Economy. Thanks to its particular composition, Greenrail sleeper is able to provide increased standards of security and innovation, and ensures technical, environmental and economical improvements.

INDUSTRIAL SECTOR – MARKET SEGMENT AND ACTUAL APPLICATIONS IN INDUSTRY

Railway infrastructure

INDUSTRIAL CLASSIFICATION - NACE CODE

F42.1.2 - Construction of railways and underground railways

1. DESCRIPTION OF ECO-INNOVATIVE SOLUTION

Technical aspects of the eco-innovative solution

Greenrail railway sleeper consists of an inner core in pre-stressed, reinforced concrete, and an outer shell obtained from secondary raw materials: rubber from end-of-life tires and recycled plastics. Thanks to this unique composition, Greenrail is able to reuse up to 35 tons of these materials per each kilometer of a railway line, and ensure numerous improvements, such as:

- lower ballast pulverization with consequent reduction of maintenance costs;
- increased lifespan;
- larger resistance to the lateral displacement of rails;
- significant electrical isolation;
- improved resistance to the freezing / thawing phenomenon;
- concrete inner core's protection from sand in the desert areas;
- reduced vibration and noise levels deriving from the railway traffic;

Apart from the Greenrail Basic sleeper, the company has also designed smart products:

- Greenrail Solar: a Greenrail sleeper with a photovoltaic panel integrated, able to harvest solar energy;
- Greenrail Linkbox: a Greenrail sleeper, which uses the harvested energy to power various systems integrated in its structure: real-time diagnosis, predictive maintenance, telecommunication.

Economic and environmental benefits of the eco-innovative solution

Thanks to its unique composition, Greenrail is able to reuse up to 35 tons of recycled plastics and rubber from end-of-life tires per each kilometer of a railway line, providing an important contribution to the waste management issue and following circular economy principles. The company, together with its partners, provides a valuable know-how regarding waste recycling process and facilities, which would create new jobs. Last, but not least, Greenrail sleeper has a longer lifespan and requires less maintenance, which significantly reduces railway maintenance costs.

2. AVAILABILITY OF THE ECO-INNOVATIVE SOLUTION AND BUSINESS PARTNERSHIP

Market readiness, Trade mark, existing market coverage, commercialization strategy

In the end of 2017, Greenrail signed its first contract with an American company for commercialization and production of its railway sleepers in 6 states of USA. Greenrail technology is currently patented in 80 countries worldwide. The company is able to design and produce a railway sleeper dedicated specifically for each country / client, following international technical specification. The business model of Greenrail is based on patent licensing and setting up a JV with local partners.

Requirements to adapt the solution to the local market and potential applications/market size

Greenrail sleepers are a tailor-made product and can be applied on any kind of railway lines. They can be used both in the maintenance activities of an existing railway line, and in the construction of a new one. Railway transport is expected to maintain its high growth rate in the following years, with more than 170.000 km of new railway lines already planned to be realized worldwide.

On site-after-sales services support and the technical assistance requirements

In the case of signing a licensing agreement, Greenrail is responsible for providing all necessary know-how about its technology, designing a railway sleeper dedicated to the specific market, designing and supplying a manufacturing plant to be set up on the spot. Greenrail provides remote assistance during the production process and for the maintenance of its products after their installation on-site.

Targeted local business partners

- Ministry of Environment
- Ministry of Transport
- Ministry of Infrastructure
- Railway companies
- Railway infrastructure manufacturers
- Railway sleepers' producers
- Potential investors & business partners.

Type of local business partnership sought

Joint Venture Agreement, License Agreement.