

## ABOUT US

Rototech Makina is a corporate engineering and technology company specializing in heavy industry, known for its mechatronic projects and innovative solutions focused on energy efficiency. The company develops industry-specific solutions that contribute to both efficiency and sustainability goals.



## Innovative Solutions



## Alternating Cylinder Systems



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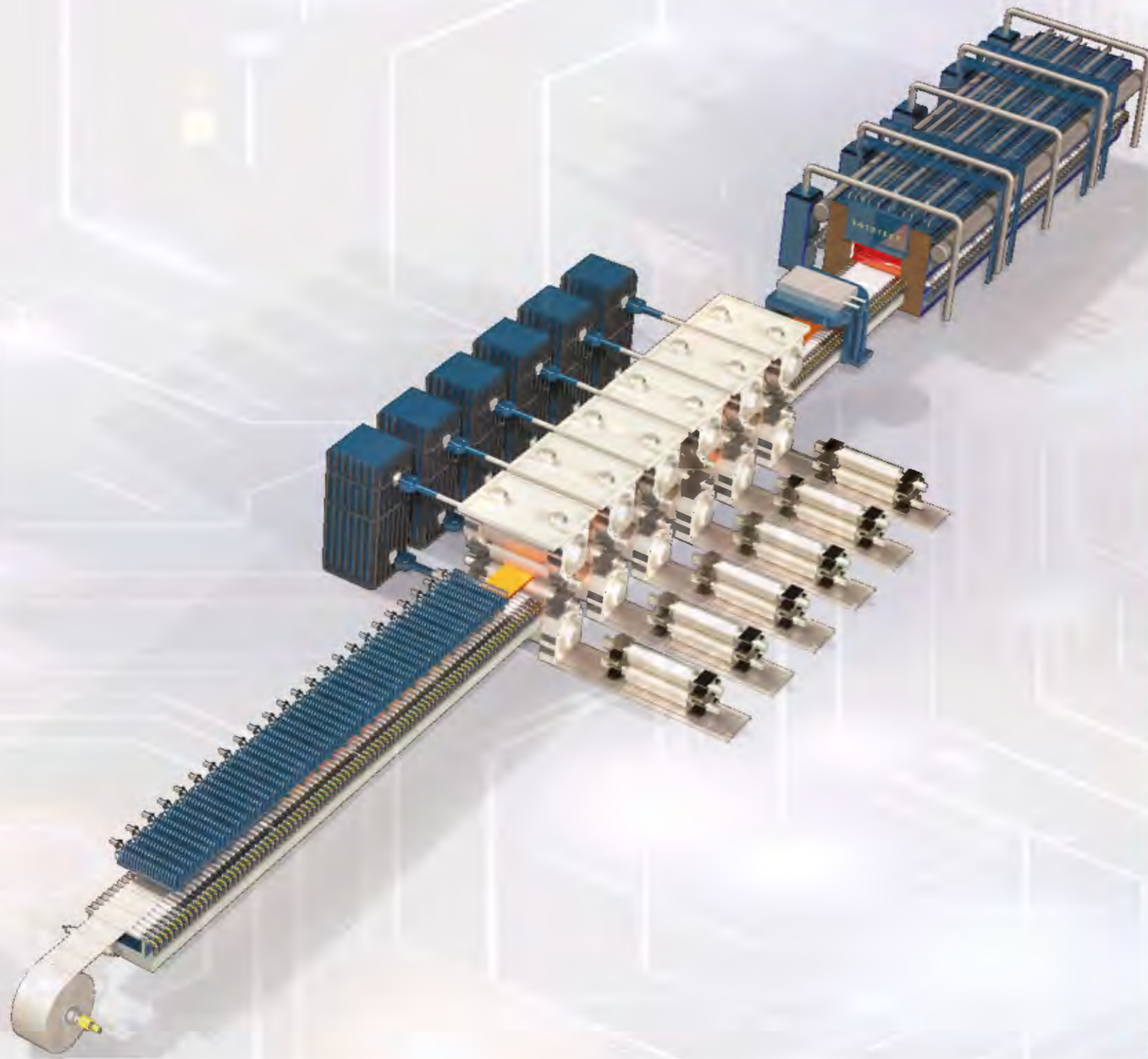
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## About Our Company

ROTOTECH MAKİNA SAN.VE DIŐ.TİC.LTD.ŐTİ. started its production and sales operations in 2001. We prioritize a structure based on trust as a core value in our production processes. Not only do we offer our customers quality products, but we also aim to establish long-term business partnerships with our transparent, sustainable, and reliable approach.

Through our R&D efforts, we continuously improve, provide innovative solutions to the sector, and always focus on creating higher added value for our customers. Trust and innovation are at the heart of our business for all our stakeholders in the industry.

## Our Vision

Our vision at Rototech is to be a reliable brand in the national and international markets by maintaining our pioneering identity in production, offering innovative solutions and original designs.

We are working more diligently to continuously follow advanced technologies and provide our customers with products and services that meet the highest quality standards.



## Hedeflerimiz

- *Increase customer satisfaction*
- *Developing innovative products*
- *Grow in the global market*

Success is where preparation and opportunity meet.



## Electricity Generation Project with Rototech In-Cylinder Alternator

### Project Purpose and Presentation

The idea behind this project originated from the high production costs in heavy industry in our country and the decreasing competitiveness in international markets.

In the production process, the electrical energy used is primarily converted into kinetic energy based on movement. However, when this energy is not recovered, it remains unused, increasing production costs for businesses.

In our country, companies often hesitate to implement system improvements or R&D projects because they believe that recovering the energy consumed during production is difficult or that it will incur additional costs.

Since the system is focused on production, the energy recovery part is often neglected (recovering while producing). In reality, it is possible to generate electrical energy in any area where movement exists. Although these recoveries are currently small, I believe they will lay the foundation for significant future projects as this project progresses.

Best regards,

Seyit Kaya



*This project contributes to environmental sustainability by ensuring the efficient use of resources. By reducing waste, it benefits both nature and the economy.*

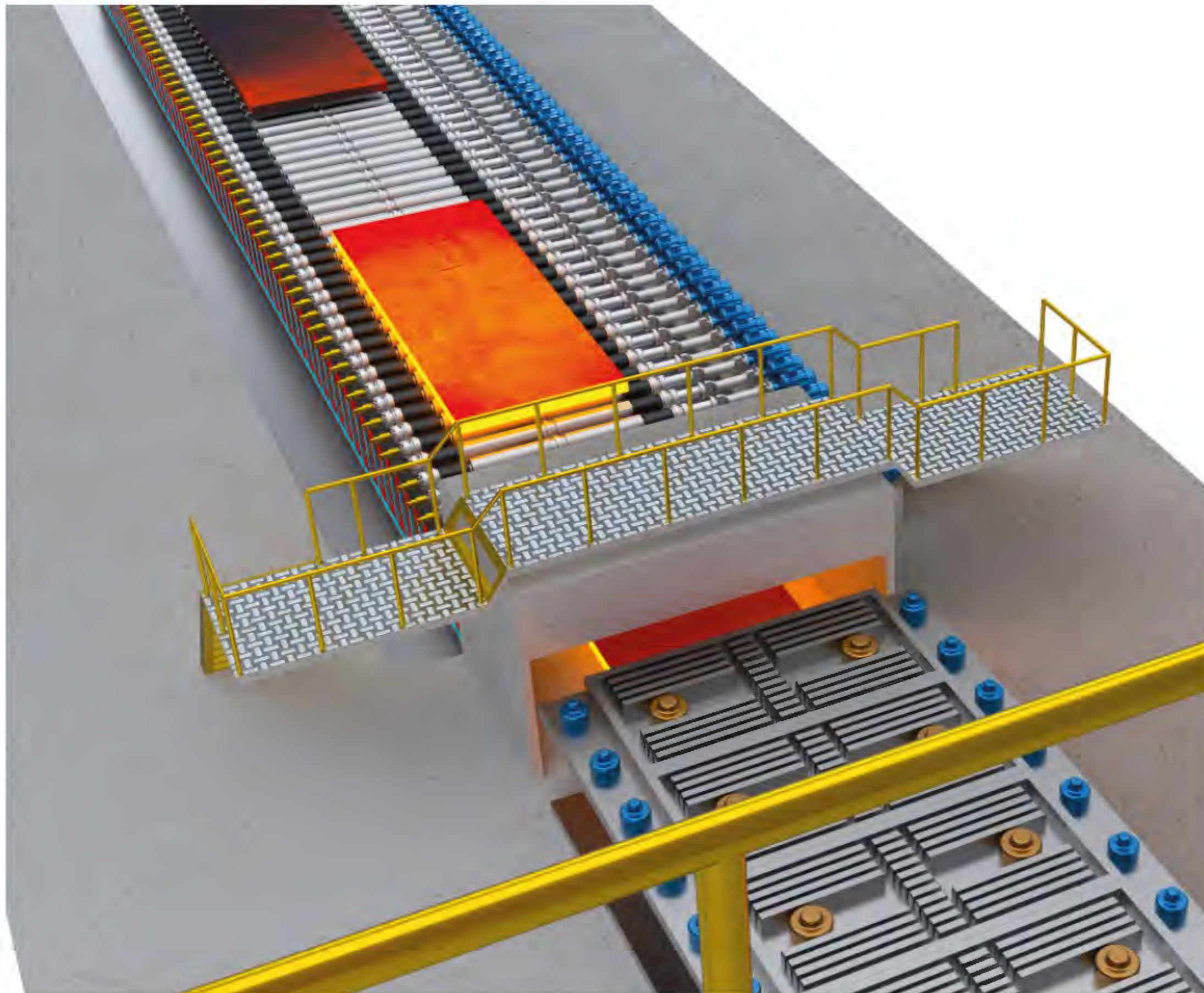
Clean energy is the most valuable legacy to be left to the future.

## THE POSITION OF OUR PROJECT IN THE IRON AND STEEL INDUSTRY

Our project provides innovative solutions tailored to the challenging production conditions of the iron and steel industry, enhancing the reliability and energy efficiency of businesses.

With the system we have developed, uninterrupted production is possible even under tough working conditions, while the electricity recovered through alternators provides additional financial strength to enterprises. As a result, energy costs are significantly reduced, and a strong contribution is made to sustainable production practices.

Additionally, the project offers factories benefits such as lower energy costs, continuous production, decreased maintenance needs, and sustainability, thereby increasing competitiveness and adding value to the future of the sector.





## Project Material and Technical Details

### Materials and Durability

The sealing heads and specially alloyed steel components used in the project are designed to withstand the high temperatures and challenging conditions of iron and steel plants. Thanks to the materials used, the quality of the rollers is enhanced, and the rates of wear and deformation are reduced.

### Contribution of the Alternator

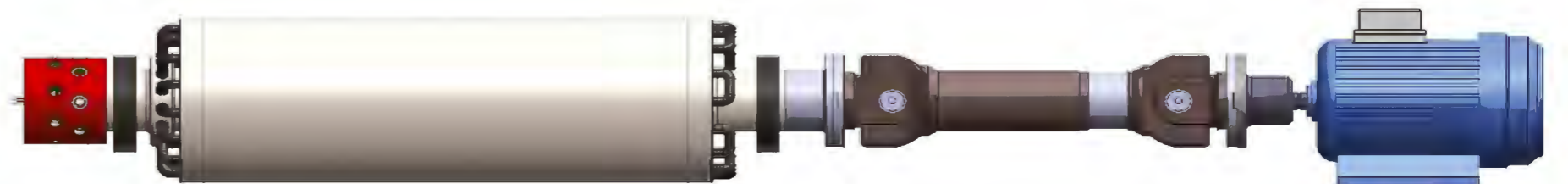
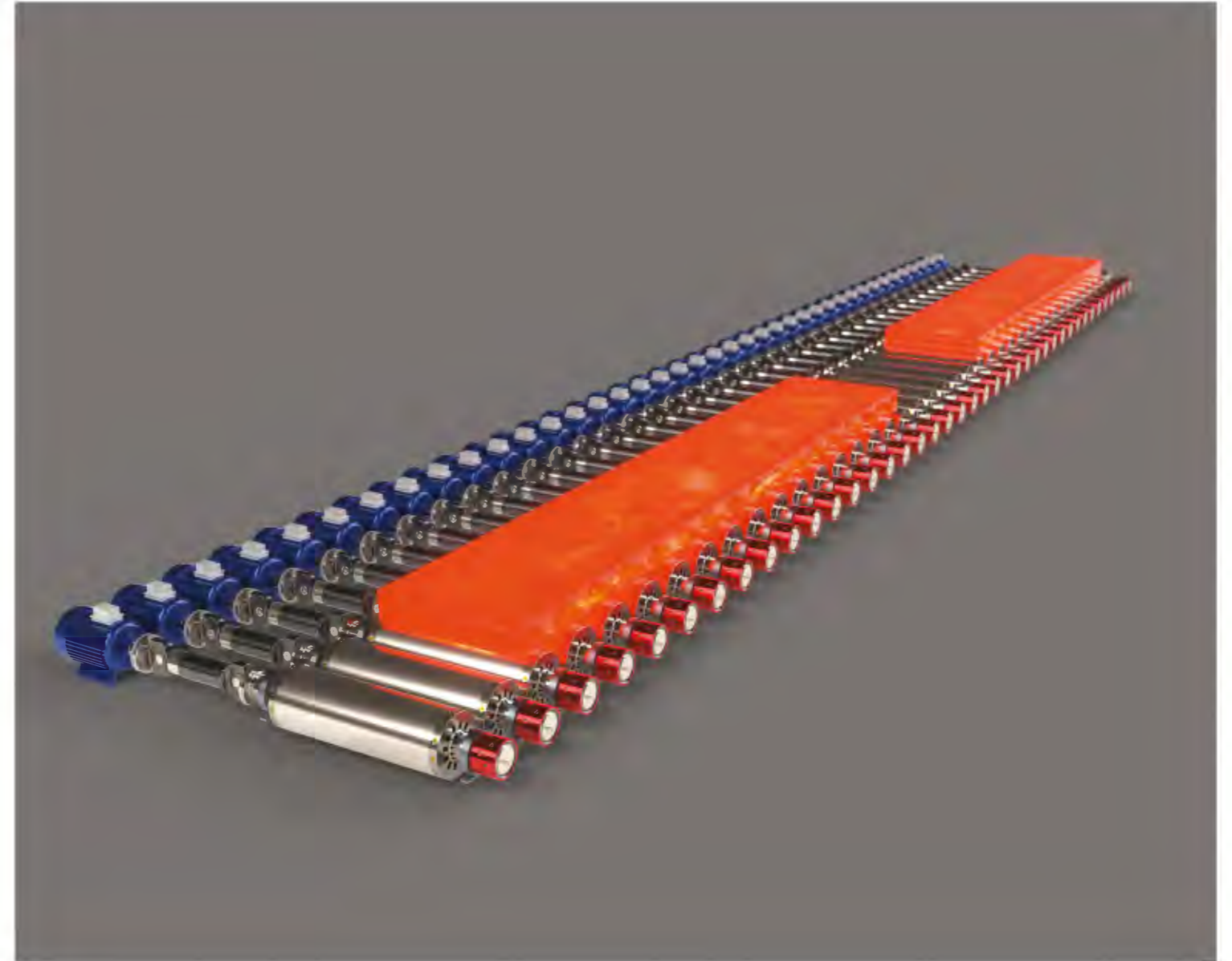
With this system, 60-80% of the energy consumed by the rollers is recovered and converted into electrical energy thanks to the alternator. This allows a significant portion of the total energy consumption of the factory to be reclaimed. As a result, both energy costs are substantially reduced and environmental sustainability is supported.

### Efficiency and Savings

The electricity savings provided by the alternator contribute to meeting the factory's internal needs. This system enhances energy efficiency, reduces operational costs for businesses, and simultaneously supports a sustainable production mindset.

### Material Life

Thanks to the durable materials used, the lifespan of the equipment is extended, maintenance requirements are reduced, and the factory's uninterrupted operation is supported.



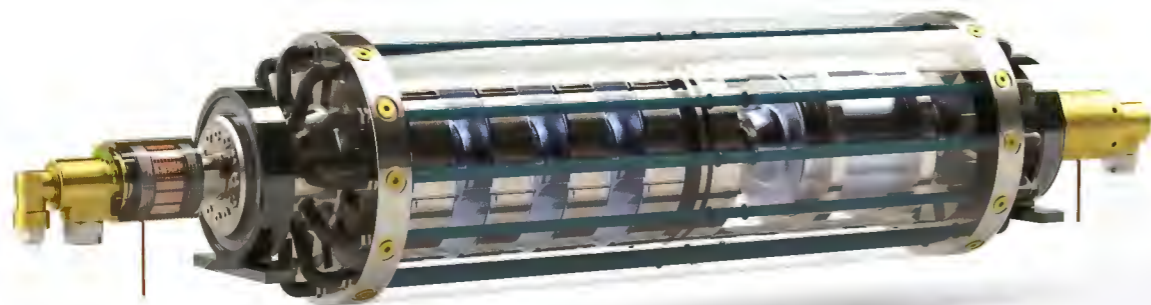
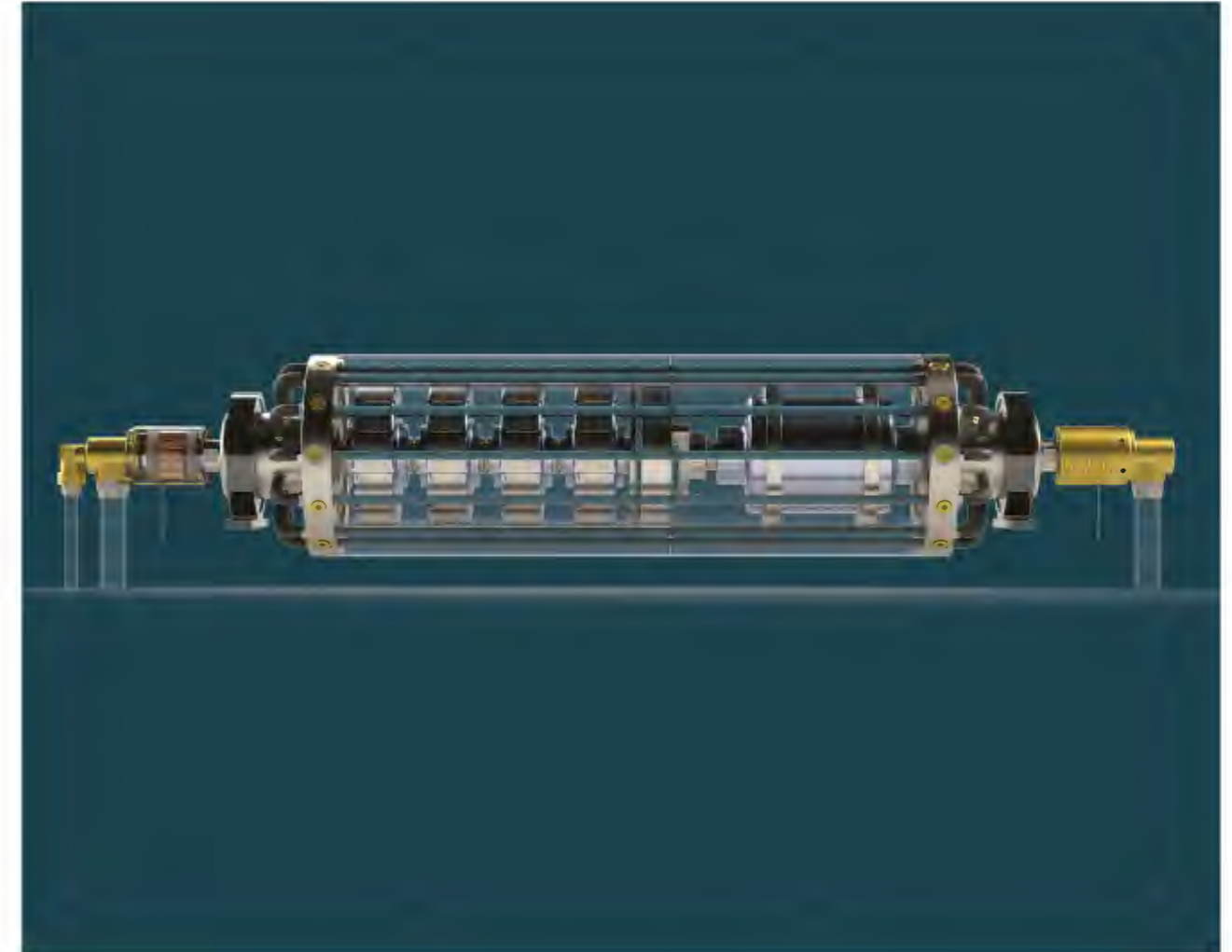


### Cylinder System with Alternator

This innovative project is designed with external rotor magnetized alternator technology integrated into the rollers (cylinders/spindles) used in the iron and steel industry. During operation, the mechanical energy generated as slabs and iron billets pass through the rollers is converted into electrical energy through the alternator. Thus, the movement arising in the production process is recovered to contribute to the factory's energy needs.

The system optimizes energy management with its controlled feed approach, resulting in a significant reduction in the factory's total energy consumption. Additionally, the produced energy can be transferred to the grid as AC or shared DC bus.

The components used in the project, which are resistant to challenging conditions, include a carbon fiber protective cover, water-cooled stator, and regenerative drive technology. These features make the system long-lasting, low-maintenance, and highly efficient. This structure reduces operating costs while making a strong contribution to continuous and sustainable production.



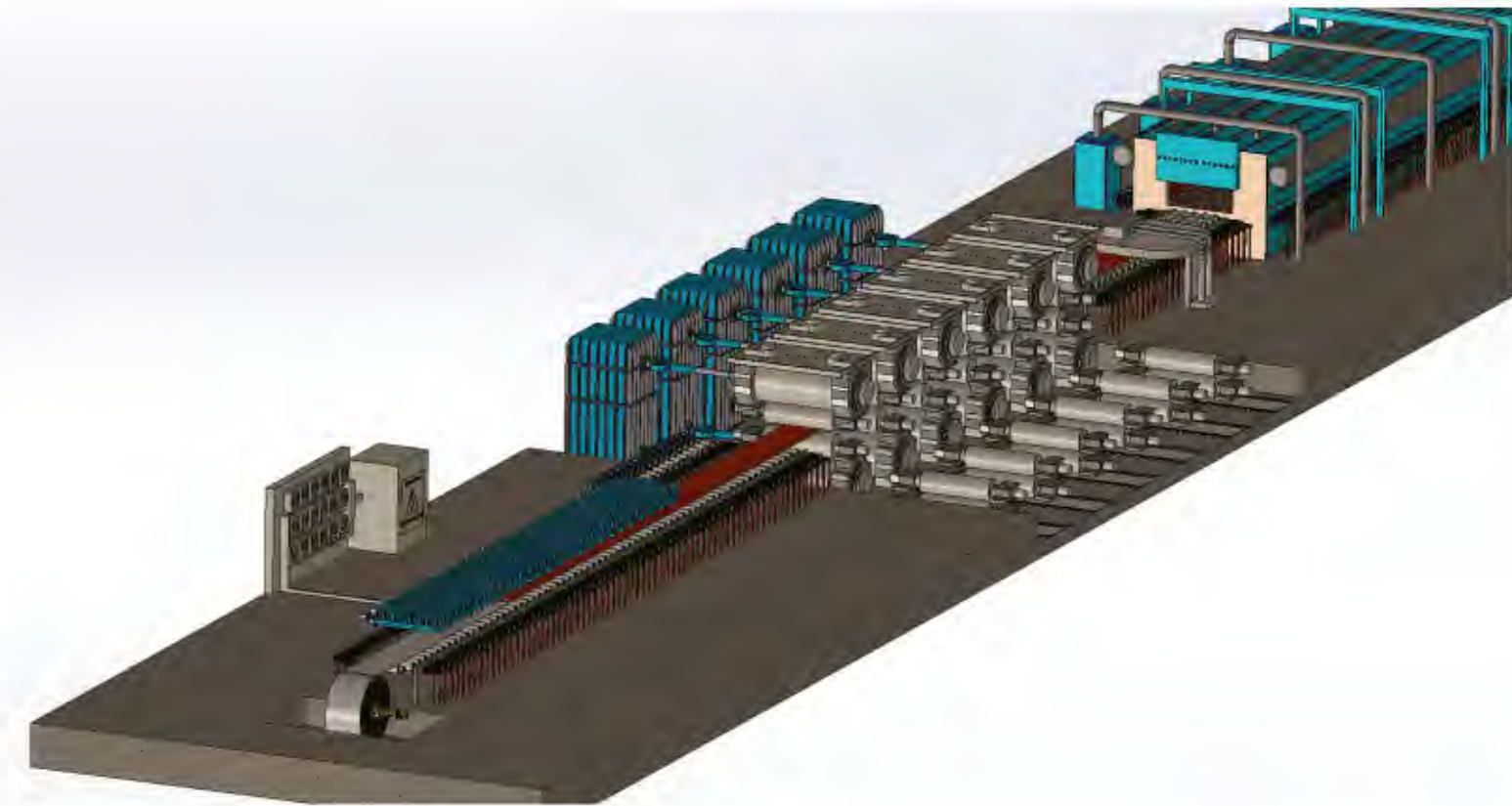


## PROJECT DEVELOPMENT

This project was initiated in 2023 with the start of its initial design studies. At that time, while new ideas for energy recovery in the iron and steel industry were being explored, a generator concept that could be integrated into the roller was proposed.

Between 2023 and 2024, basic engineering calculations, material selections, and initial laboratory prototypes were developed.

In 2025, the project advanced further with critical improvements such as water cooling systems, carbon fiber protective covers, high-temperature resistant insulation, and regenerative drive integration. These enhancements made the system more durable, reliable, and suitable for industrial applications.



### 2023

### 2024

### 2025



Beginning

R&D

Pilot Prototypes

Advanced Tests

Final Productization

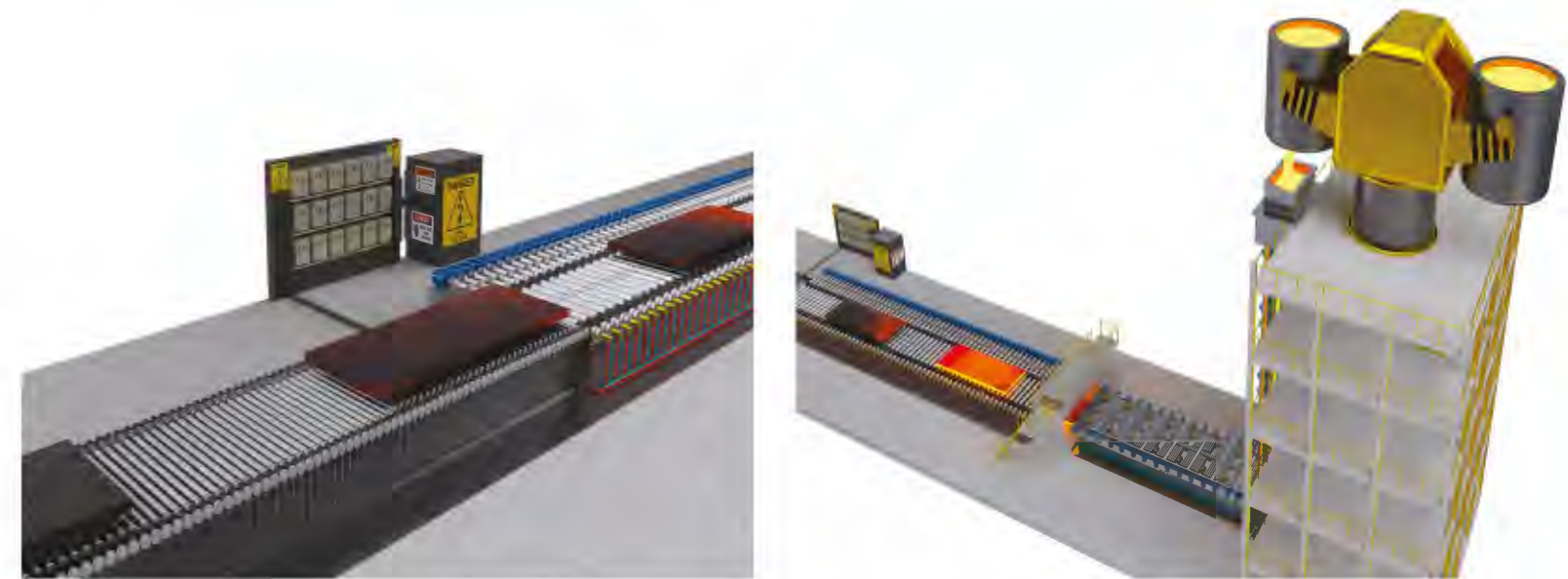
The emergence of the project idea.

Production of the first prototypes in a laboratory environment

Conducting first field tests on an industrial scale.

Regenerative drive integration, efficiency measurements and long-term durability tests.

A fully commercial system ready for industrial use.



As of 2025, this project has evolved beyond just an engineering concept; after three years of R&D, field testing, and technological advancements, it has become a viable, sustainable, and high-efficiency energy recovery solution applicable to the iron and steel industry.

**“Power to Industry, Energy to the Future!”**

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