

TURN-KEY  
AUTOMATIC

# WASTE SORTING PLANTS

THE POWER OF  
RECYCLING



[www.benli.com.tr](http://www.benli.com.tr)

**benli**  
RECYCLING  
TECHNOLOGIES

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**MAKE YOUR  
INVESTMENT IN THE  
RIGHT PLANT WITH  
THE RIGHT  
PROCESS  
ENGINEERING**



# MAXIMISE YOUR RETURN OF INVESTMENT WITH 55+ YEARS OF WASTE MANAGEMENT EXPERIENCE



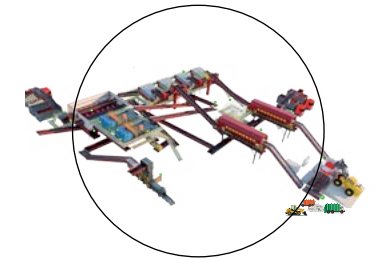
**Benli offers integrated and tailor-made solutions with its experienced squad of solid waste management experts.**

Benli continues its activities by employing more than 250 people in 6 production centers in 2 different countries with a total area of more than 50.000m<sup>2</sup>.

Benli operates in the fields of solid waste management services, wooden pallet recycling, EPDM rubber recycling, end-of-life tire recycling, turn-key solid waste sorting plant contracting, and the manufacturing of individual sorting equipment.

Thanks to its modern facilities and expert team, Benli, which focuses on customer satisfaction, quality service, and sustainability, has also brought an innovative perspective to the sector with the machines, systems, and processes it has developed by closely following the developments in the waste management sector globally.

**6** Manufacturing Centres  
in  
**2** Countries



Process Guarantee

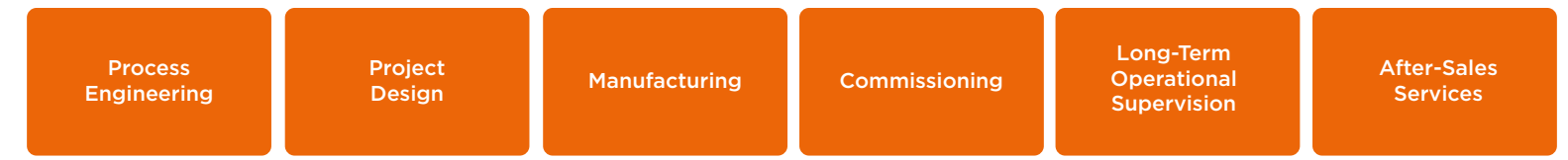


Performance Guarantee



Availability

**We stand with you in all processes of Waste Sorting Plants.**



## MUNICIPAL AND INDUSTRIAL SOLID WASTE MANAGEMENT SYSTEMS

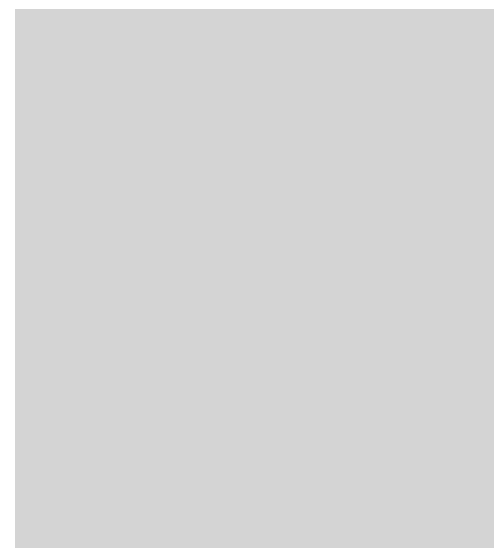
With more than half a century of our experience; we increase the value of your investment with services such as engineering, design, planning, production, commissioning, guarantee and long-term supervision for waste sorting plants, one of the rising investment areas.

- Municipal Solid Waste
- PET / Mixed Plastic Waste
- Lightweight Packaging Waste
- RDF / SRF Preparation
- Waste to Energy

# WE DON'T JUST OFFER A WASTE SORTING PLANT, WE ALSO OFFER OUR 55+ YEARS OF WASTE MANAGEMENT EXPERIENCE

Benli integrates over 55 years of experience in the waste and recycling sector into the facilities it builds for clients in Türkiye and around the world. Benli offers unique facility construction solutions for the sorting of municipal solid waste, plastic waste, packaging waste, and industrial waste, as well as the preparation

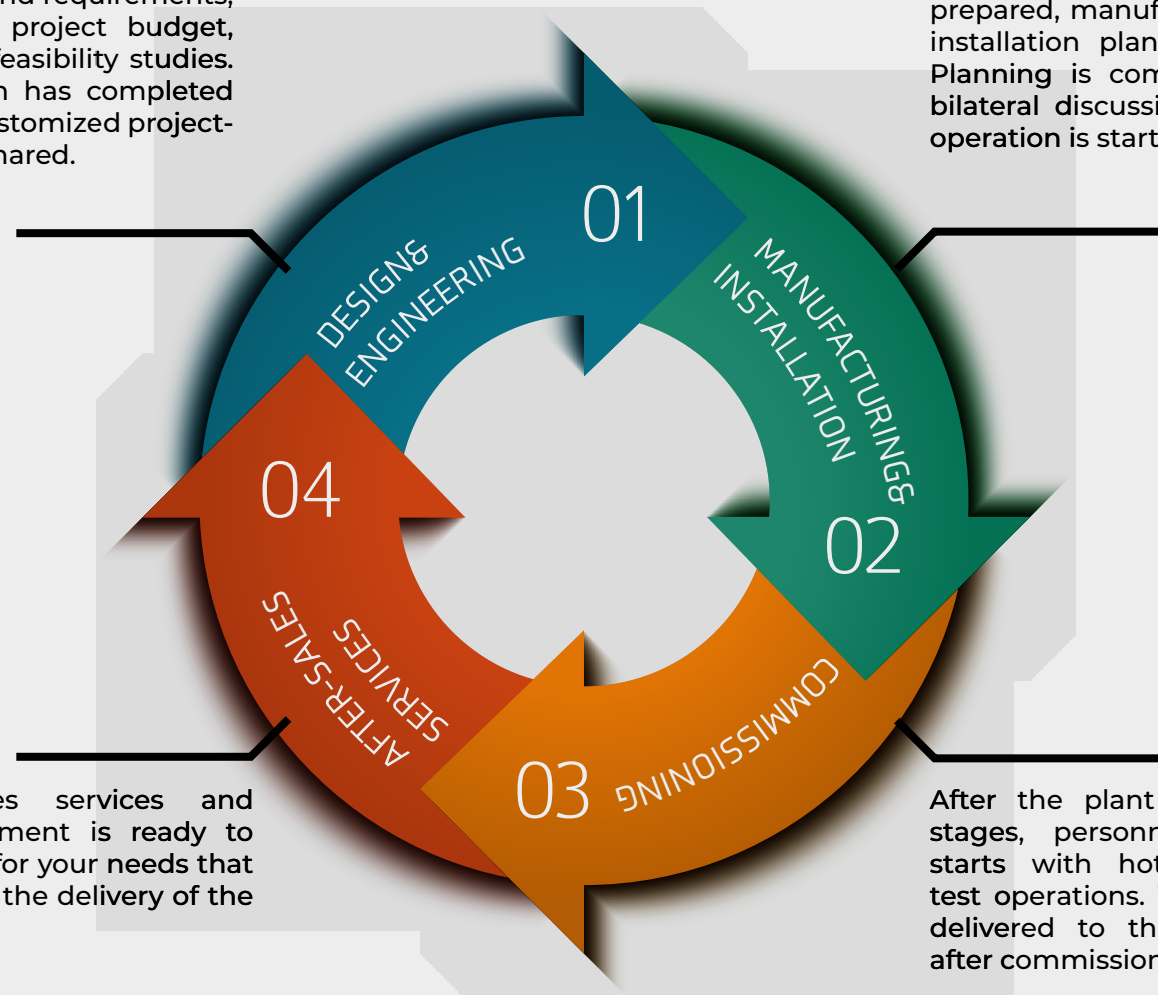
of SRF/RDF. With its waste management experience, advanced process engineering, design capabilities, performance and availability guarantees, and dynamic after-sales services, Benli provides turn-key solutions that meet the needs of the recycling sector from a single source.



# MAKE YOUR INVESTMENT IN THE RIGHT PLANT WITH THE RIGHT PROCESS ENGINEERING

Your needs are thoroughly assessed. Our design and engineering team prepares an optimized plant design tailored to your needs and requirements, calculates the project budget, and conducts feasibility studies. Once our team has completed their work, a customized project-based offer is shared.

Our after-sales services and project department is ready to offer solutions for your needs that may arise after the delivery of the plant.



Following the project confirmation after the correct process and budget plans are prepared, manufacturing and installation plans are made. Planning is completed after bilateral discussions and the operation is started.

After the plant installation stages, personnel training starts with hot and cold test operations. The plant is delivered to the customer after commissioning.

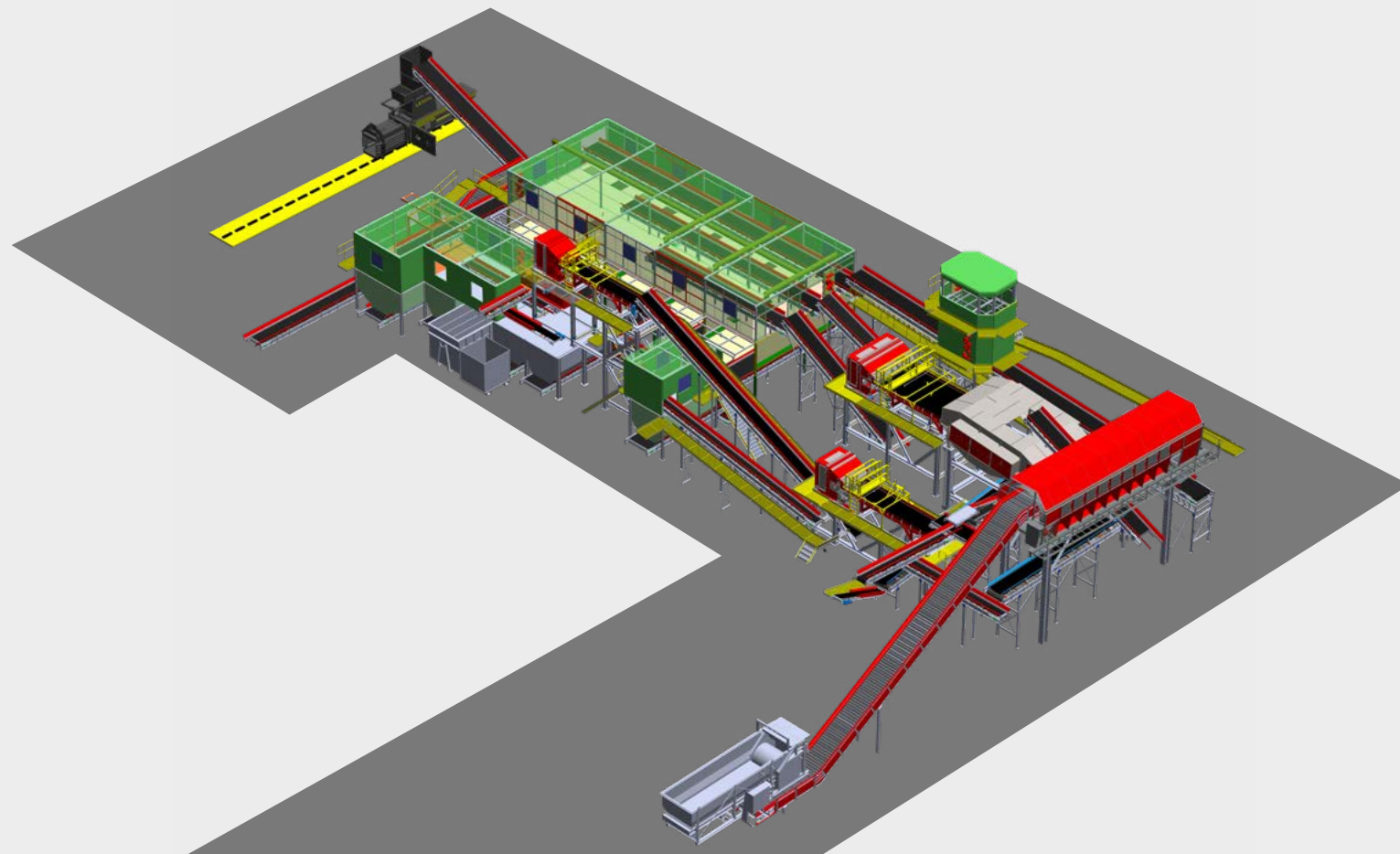


Benli integrates 55+ years of experience in the waste and recycling sector into the plants it builds for its customers in Türkiye and around the world. Benli offers unique plant-building solutions for sorting municipal solid waste, plastic waste, packaging waste, industrial waste, and RDF preparation. Thanks to its waste management experience, advanced process engineering, design capabilities, performance and availability guarantees, and dynamic after-sales services, Benli provides turn-key solutions that will meet the needs of the recycling industry from a single source.

TURN-KEY  
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# PACKAGING WASTE SORTING PLANT

BENLİ OFFERS TAILOR-MADE SOLUTIONS TO VALUED CUSTOMERS SYNTHESIZING ITS DEEP EXPERIENCE COMING FROM YEARS OF SOLID WASTE TREATMENT OPERATION AND EXPERT ENGINEERING & DESIGN TEAM. THESE SOLUTIONS OFFER ADVANCED AVAILABILITY RATES UP TO 90% PER YEAR AND AT DIFFERENT CAPACITIES AND FULL OPTIMIZATION.



## THE POWER OF RECYCLING



**1**  
**AUTOMATIC CONTROL  
(SCADA) ROOM**



**2**  
**TIPPING  
FLOOR**



**3**  
**BAG OPENING &  
DOSING**



**4**  
**TROMMEL  
SCREEN**



**5 6**  
**MAGNETIC  
SEPARATOR**



**7**  
**BALLISTIC  
SEPARATOR**



**8**  
**OPTICAL SORTER  
2D FRACTIONS  
(PE FILMS)**



**9**  
**OPTICAL SORTER  
3D FRACTIONS  
(PE-PP PLASTICS)**



**10**  
**OPTICAL SORTER  
3D FRACTIONS  
(PET PLASTICS)**



**11**  
**EDDY CURRENT  
SEPARATOR**



**12**  
**FILM SUCTION UNIT**



**13**  
**AUTOMATIC BUNKER  
SYSTEM**



**14**  
**HORIZONTAL  
BALE PRESS**



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# RDF / SRF PREPARATION PLANTS

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THE POWER OF  
RECYCLING



1  
**WASTE RECEPTION  
AREA**



2  
**DOSING  
BUNKER**



3  
**SHREDDER**



4  
**RDF/SRF ONLINE  
ANALYSIS MODULE**



5  
**BALER  
PRESS**



6  
**RDF/SRF**

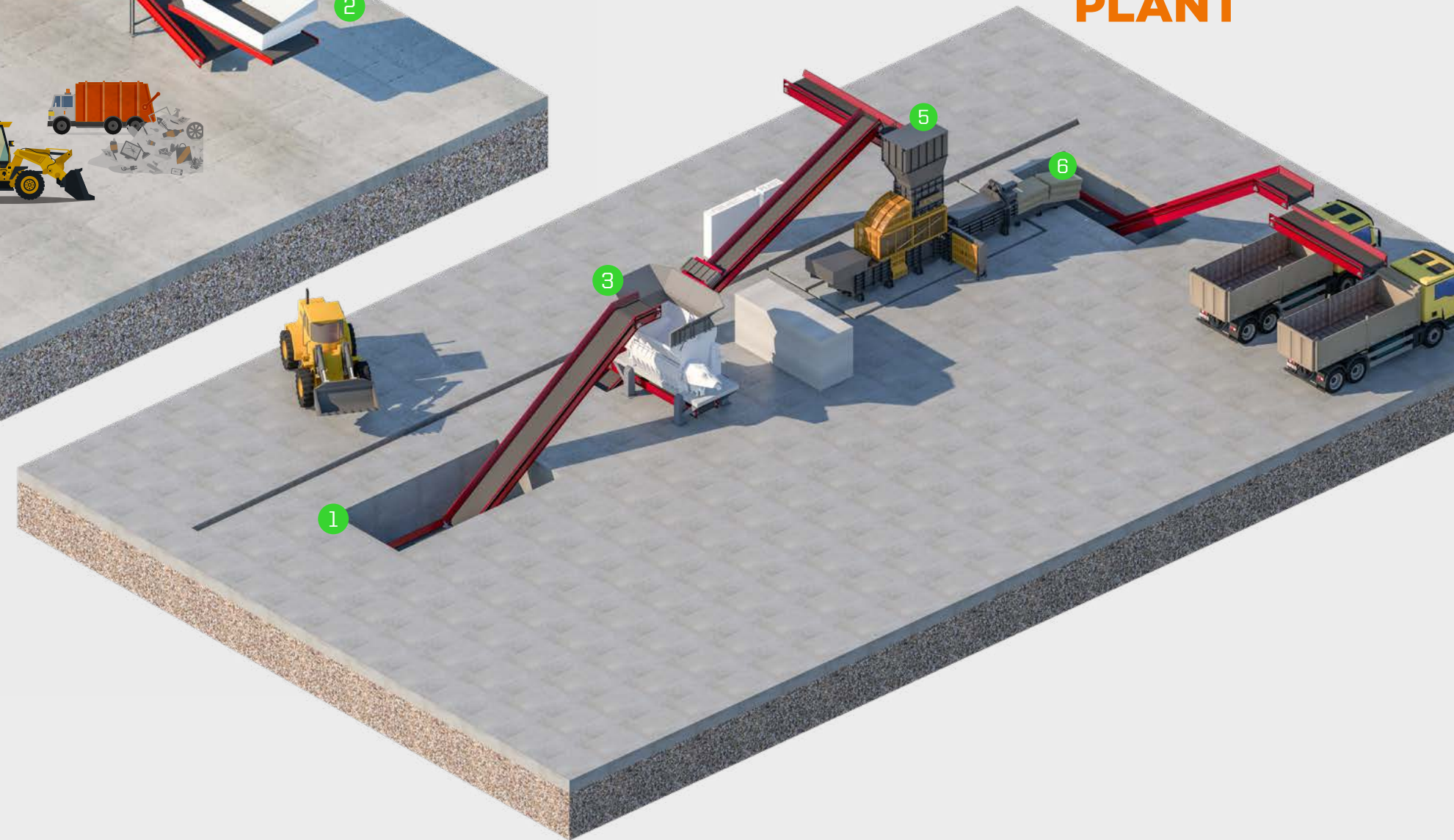




## RDF PREPARATION PLANT



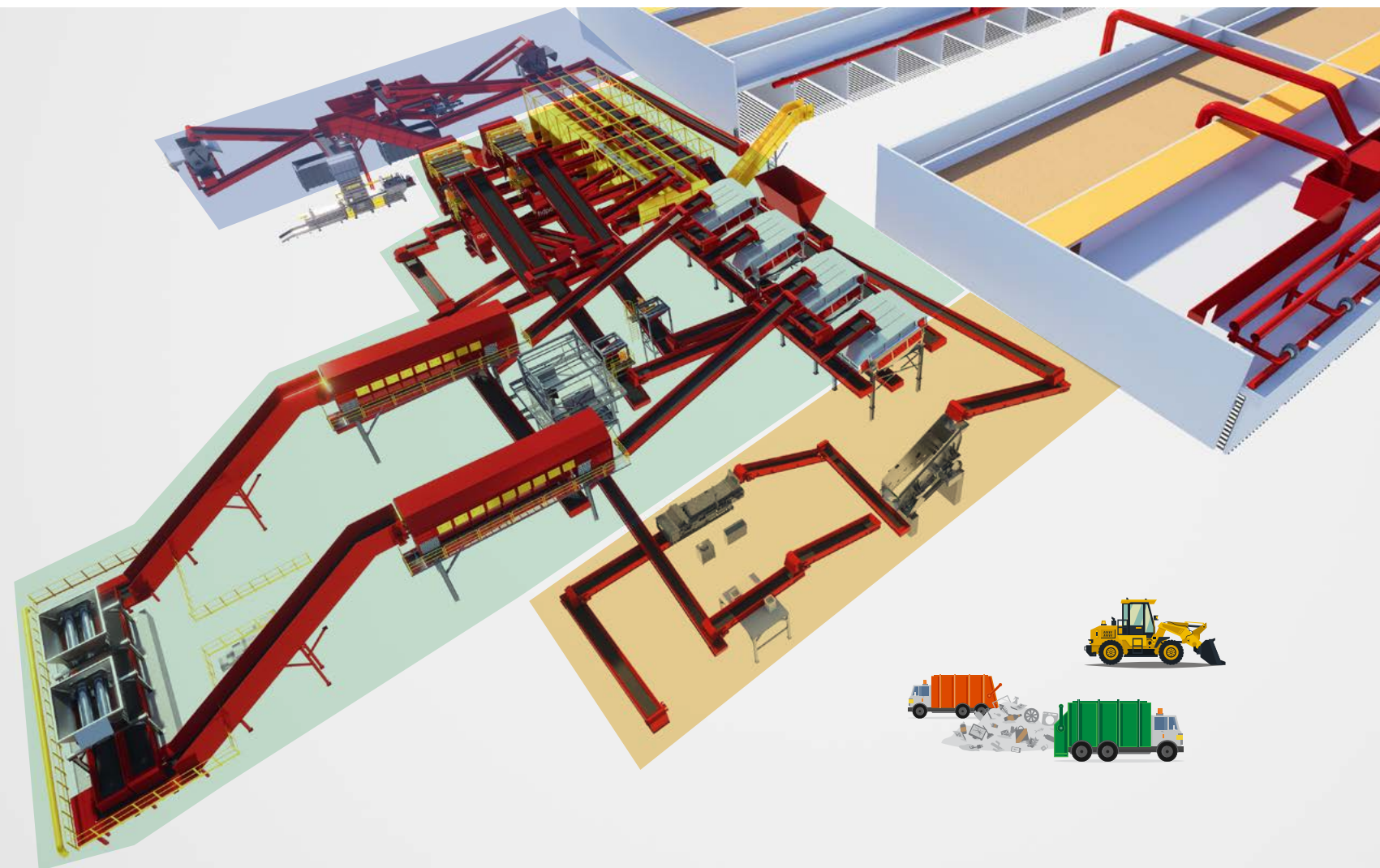
## SRF PREPARATION PLANT



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# TURN-KEY AUTOMATIC MUNICIPAL SOLID WASTE SORTING PLANTS

**BENLI OFFERS TAILOR-MADE SOLUTIONS TO VALUED CUSTOMERS SYNTHESIZING ITS DEEP EXPERIENCE COMING FROM YEARS OF SOLID WASTE TREATMENT OPERATION AND EXPERT ENGINEERING & DESIGN TEAM. THESE SOLUTIONS OFFER ADVANCED AVAILABILITY RATES UP TO 90% PER YEAR AND AT DIFFERENT CAPACITIES AND FULL OPTIMIZATION.**



## THE POWER OF RECYCLING

### 1 SORTING PLANT

This is where the mixed collected municipal solid waste is initially processed. Mixed waste is separated into OFMSW (fines fraction comprising mostly organic content like kitchen waste), Recyclables (Plastics, Metals, Paper, Cardboard, Glass), Pre-RDF (Refuse Derived Fuel), and Inert materials (Sand, stone, ceramics, etc.) with the help of the advanced technologies.

### 2 OFMSW REFINING

OFMSW is separated from the mixed municipal waste with the help of mechanical screening practices. This separation by size means there are still inorganic materials like stones, glass, metals, plastics, etc. inside the OFMSW fraction. In order to utilize the OFMSW fraction in further processes like Biodrying or Biomethanization, such impurities need to be sorted out. Effectively shaping the process with the help of magnetic separators, precision screening, x-ray sorting, and/or windshifters, and finally screw compactors, the OFMSW is refined for post-processing.

### 3 RDF PREPARATION

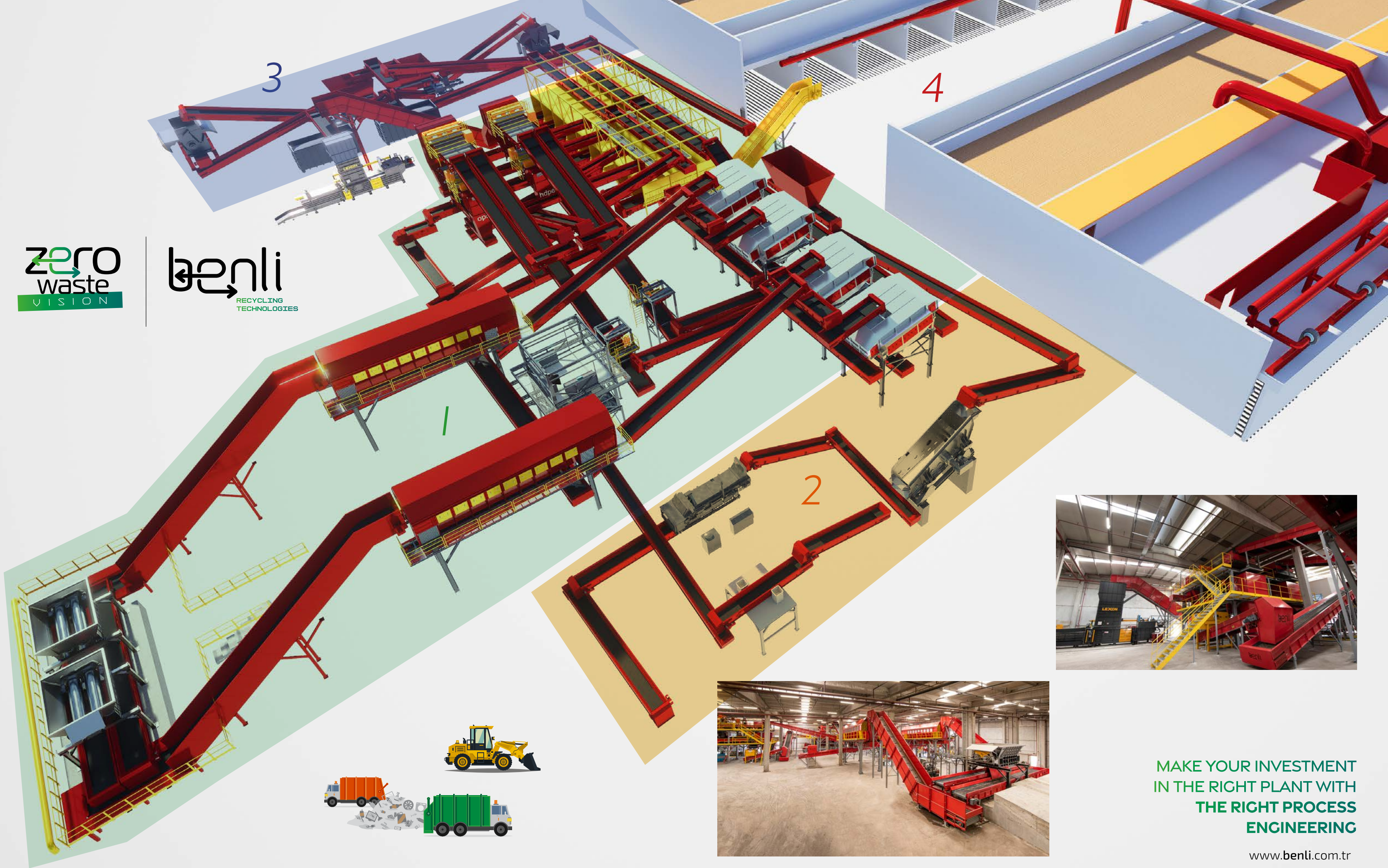
Along with the recyclable fraction with commercial value, we have also a fraction of waste that has no commercial value but calorific value. Materials like textiles, paper, cardboard, wood, plastic bags, etc. that are humid and organically contaminated can be recovered into a valuable source of energy with the help of RDF preparation systems. Pre-RDF materials listed above are reduced in size with the help of shredders, and mechanically compressed with the help of screw compactors to get rid of the free humidity. Particle size reduction is dictated by the end-user of the prepared fuel, either a cement factory or a WTE plant.

### 4 BIODRYING PLANT

The primary function of biodrying is to reduce the moisture content of OFMSW. High moisture content can be detrimental as it reduces the heating value of the material if it is used for energy production. OFMSW is placed in chambers with a controlled environment. Warm, humidified air is forced through the material. The warm and slightly moist conditions promote the growth of naturally occurring bacteria in the OFMSW. These bacteria break down organic matter, generating heat as a byproduct. This heat at the same time can be used to dry the RDF fraction. Resultingly, both the OFMSW and the waste stream with calorific value are recovered into dry and high calorific fuel appropriate for WTE and Cement Factories. This process maximizes the recovery of the MSW leaving only the inert fraction to be transferred to the landfill.

zero  
waste  
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# MIXED PLASTIC SORTING PLANT

PET AND PLASTIC PACKAGING WASTES SORTED IN THE PLANTS ARE SORTED BASED ON RAW MATERIAL TYPE AND COLOR, AND PREPARED FOR REUSE AS RAW MATERIALS



## THE POWER OF RECYCLING



**1**  
**AUTOMATIC CONTROL  
(SCADA) ROOM**



**2**  
**BALE RECEPTION  
AREA**



**3**  
**BALE OPENER**



**4**  
**BALLISTIC  
SEPARATOR**



**5**  
**MAGNETIC  
SEPARATOR**



**6**  
**OPTICAL SORTER 1  
(PET/PP)**



**7**  
**OPTICAL SORTER 2  
(HDPE / HDPE&PET&PP)**



**8**  
**OPTICAL SEPARA-  
TOR 3 (PET [COLORED;  
CLEAR&LIGHT BLUE;  
NONPET] / HDPE [COLOR-  
ED; CLEAR&WHITE; NON-  
HDPE])**



**9**  
**AUTONOMOUS  
QUALITY CONTROL  
ROBOT**



**10**  
**QUALITY CONTROL  
CABIN**



**11**  
**AUTOMATIC  
BUNKERS**



**12**  
**HORIZONTAL  
BALE PRESS**



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