

## AFR – material production and handling



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# AGENDA

1. Vecoplan introduction
2. Product Range / Waste Treatment  
Material Handling
3. Case Study
4. Engineering sample



INTRODUCTION

Preprocessing

Handling  
&  
Dosing

Engineering



# 1. Vecoplan introduction

**Vecoplan®**

Vecoplan AG is a midsize company in the middle of Germany

INTRODUCTION

## VECOPLAN AG

- 350 employees
- Turn Over 2014 100 Mill €.
- Worldwide activity



# 1. Vecoplan introduction

**Vecoplan®**

INTRODUCTION

## Treatment

Availability of fuels

Collecting infrastructure

Pre-processing

- sorting
- shredding
- conveying
- Screening
- air classification

Transport

## Storage & Dosing

Unloading & transport systems

Processing

Storage concept

- Truck Unloading
- Silo Systems
- Blending & sampling
- Dosing

Process Application

## Process Technology

burner technology

feeding points

clinker chemistry

kiln control

operational guidelines

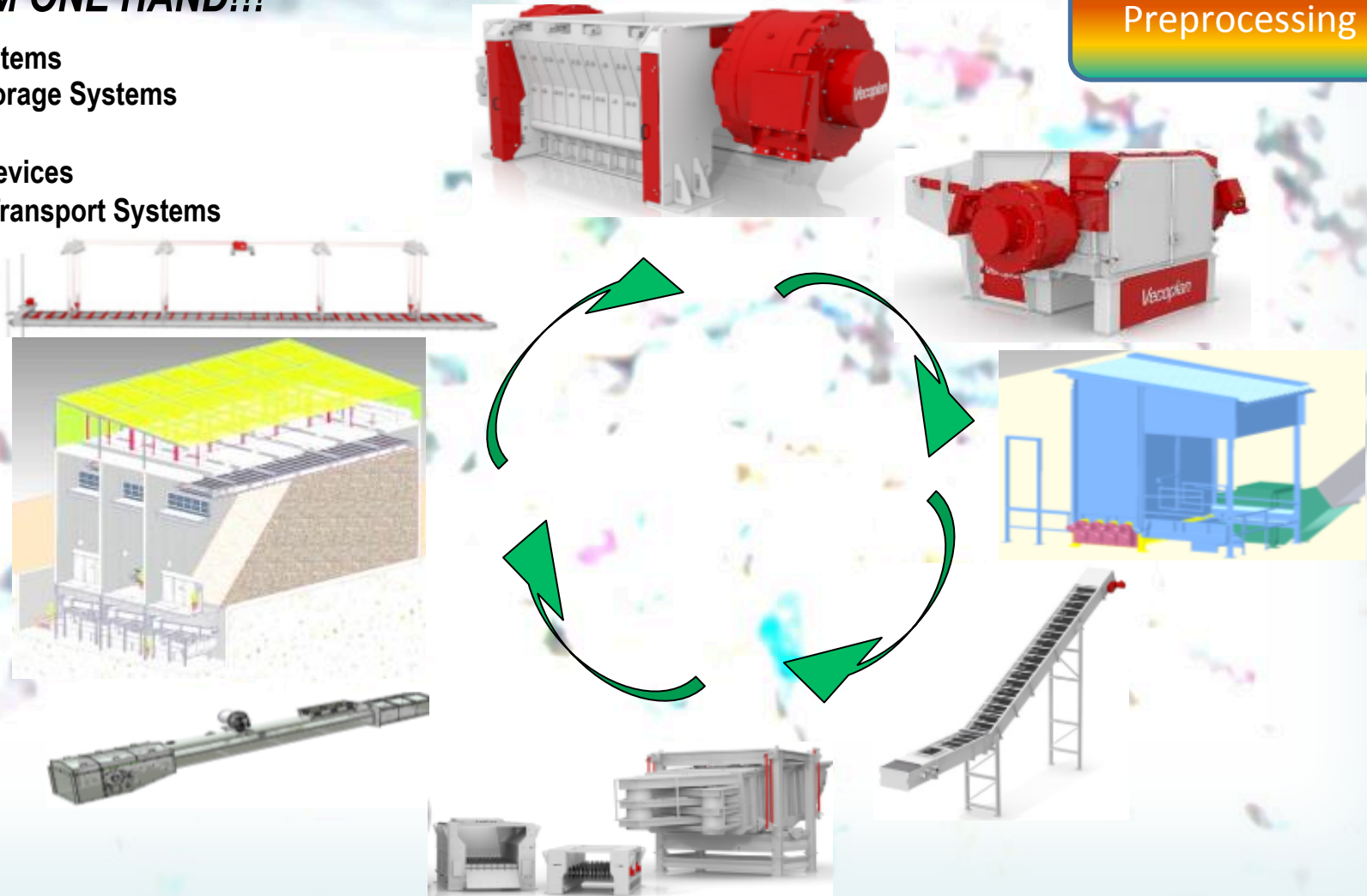
TECHNOLOGY FOR A SUSTAINABLE TOMORROW



## 2. Product Range of Vecoplan for Recycling Industry **ALL FROM ONE HAND!!!**

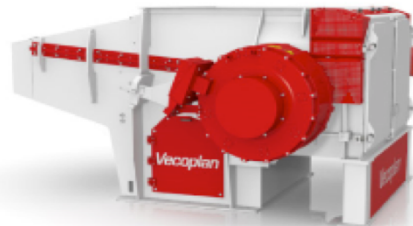
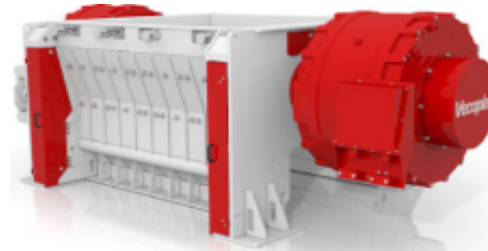
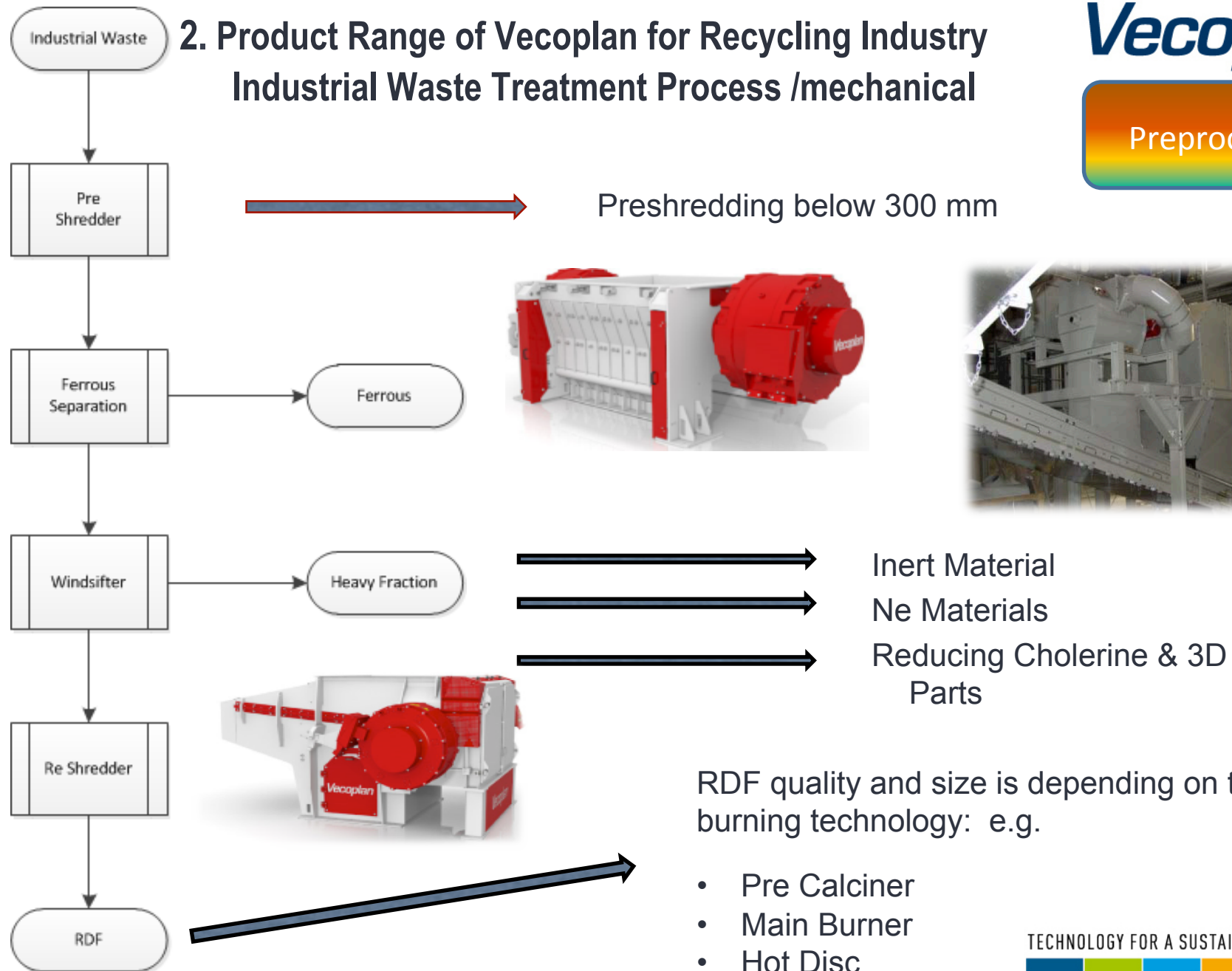
- Shredder Systems
- Bunker- & Storage Systems
- Screens
- Separation Devices
- Conveyer & Transport Systems

Preprocessing





## 2. Product Range of Vecoplan for Recycling Industry Industrial Waste Treatment Process /mechanical



RDF quality and size is depending on the final burning technology: e.g.

- Pre Calciner
- Main Burner
- Hot Disc



## 2. Product Range of Vecoplan for Recycling Industry Pre Shredder ( Single and Twin Shafts)

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Preprocessing



## 2. Product Range of Vecoplan for Recycling Industry Re- Fine Shredder

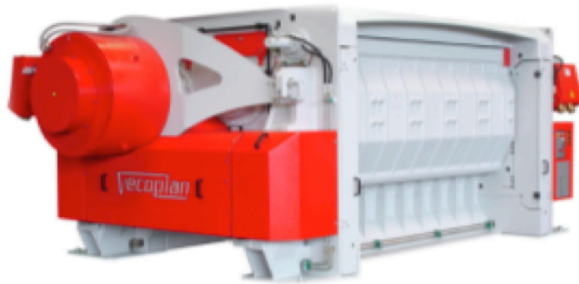


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Preprocessing

### Twin Shaft Re Shredder    Single Shaft Re Shredder

#### **VNZ 210/250 XL T**



**Robust** Re Shredder for big capacity and slightly contaminated input material with protection for tram parts



#### **VAZ 2000/2500 FT**

Re Shredder for middle capacity and slightly contaminated input material with protection for tram parts

#### **VEBS 2000/2500**

Re Shredder for big capacity and very fine output size



#### **VEZ 2000/2500**

Re Shredder for big capacity and very fine output size



## 2. Product Range of Vecoplan for Recycling Industry

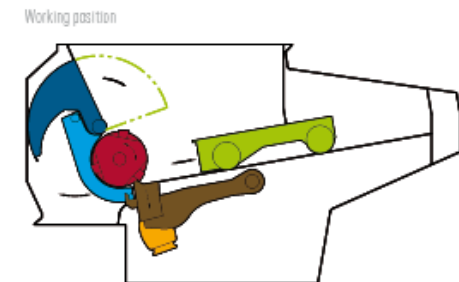
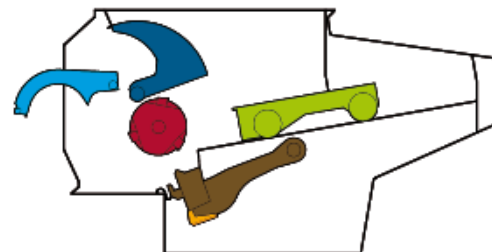
### HiTorc Drive unit

- Revolutionary drive without gear with speed controllable HiTorc motor
- Increased throughput capacity and savings in energy costs of up to 60%
- Low wear costs and minimal maintenance costs



### VAZ Flipper Pneumatically lowerable counter knife bar

- FLIPPER avoids damage to the shredding unit if contaminations occur
- Pneumatically controlled counter knife enables easy removal of contaminations without material discharge from the hopper



## 2. Product Range of Vecoplan for Recycling Industry

Type of AFR plants  
Preshredder, Windshifter, Reshredder





# ARF production in the Czech Republic

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## Two steps shredding – OZO Ostrava



## One step shredding – .A.S.A. Brno



FOR A SUSTAINABLE TOMORROW

## 2. Product Range of Vecoplan for Recycling Industry

### The Mission! The **FuelTrack** !

**Vecoplan®**

Treatment /  
Recycling plant

Preprocessing

Product Range of Vecoplan **FuelTrack** for Recycling Industry

Material  
Handling /  
Cement Plant  
Handling  
&  
Dosing

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## 2. Product Range of Vecoplan for Recycling Industry

### Special Technology AFR Handling

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Handling  
&  
Dosing



Sampling Station

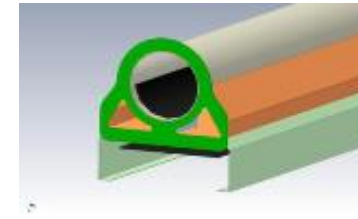


TULS

**The  
Latest  
Developments**



New Loading and Unloading Conveyor



VecoBelt



Vecojector

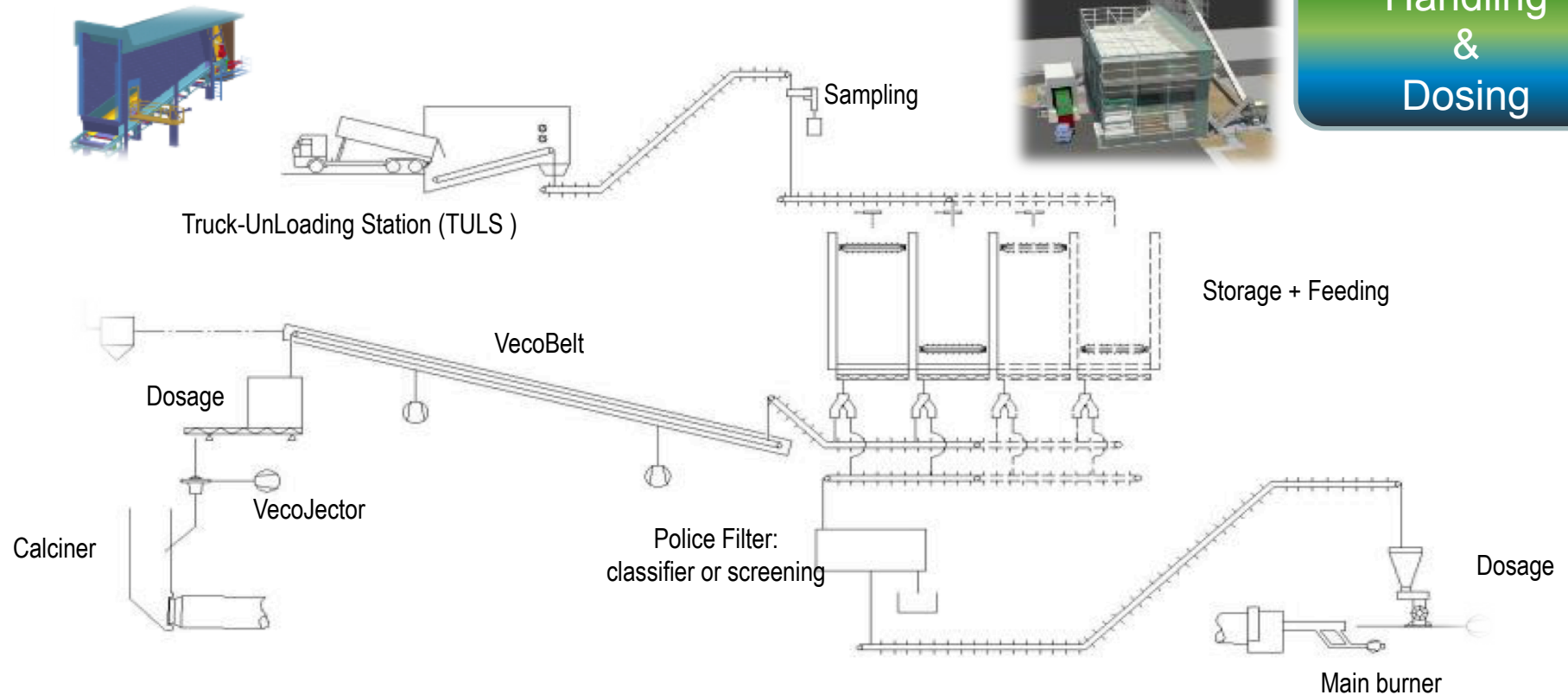
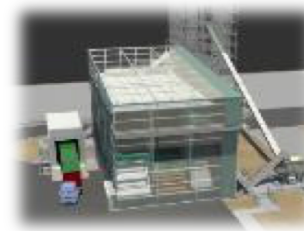
TECHNOLOGY FOR A SUSTAINABLE TOMORROW



## 2. Product Range of Vecoplan for Recycling Industry Material Handling

**Vecoplan®**

Handling  
&  
Dosing

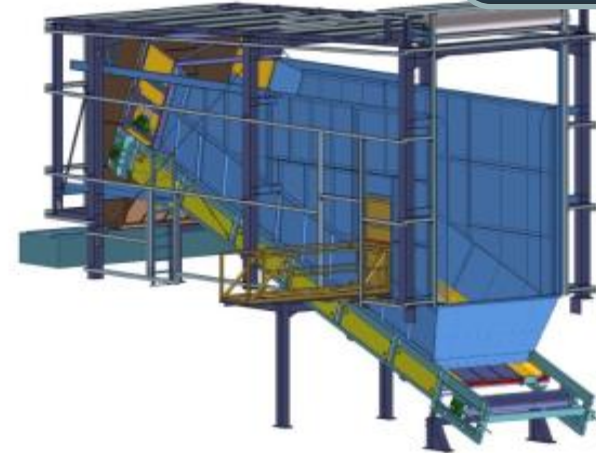




## 2. Product Range of Vecoplan for Recycling Industry / Technology AFR Handling

**Vecoplan®**

Handling  
&  
Dosing



- For Walkie Floor and Tipping Trucks
- Rubber sealed!
- Belt Conveyor for material discharge easy cleaning



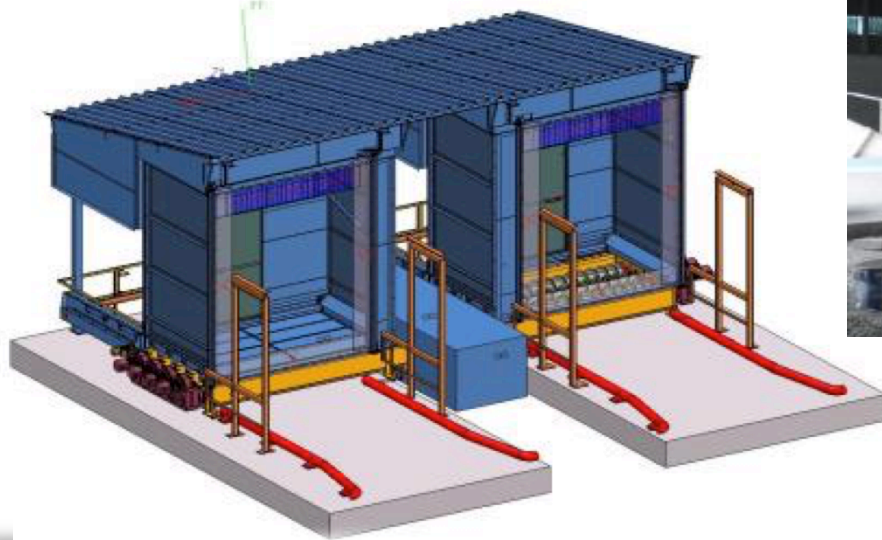
TECHNOLOGY FOR A SUSTAINABLE TOMORROW



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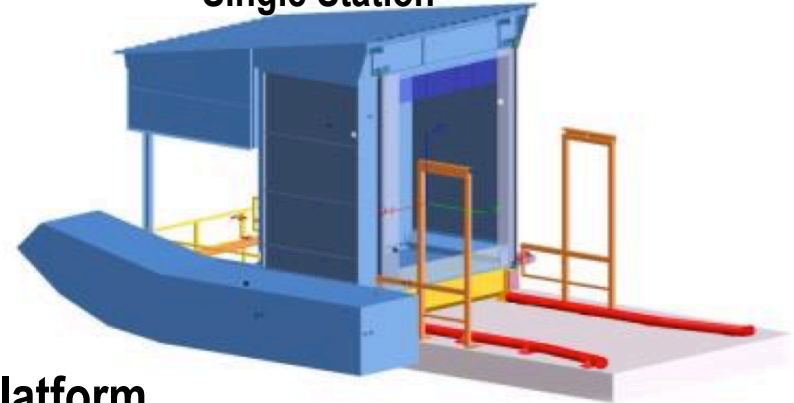
**Vecoplan®**

Truck Unloading Station – TULS II



Handling  
&  
Dosing

Single Station



- for Walking Floor Trucks
- front side locked with a closed maintenance platform
- 4-screw conveyor as discharge device
- transfer funnel to drag chain conveyor
- rubber sealed

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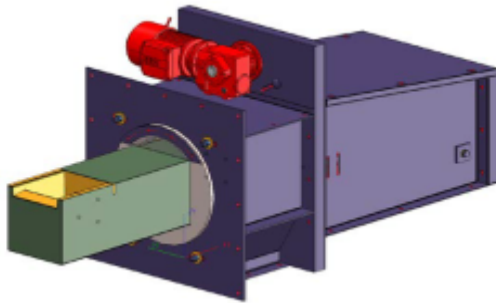
## 2. Product Range of Vecoplan for Recycling Industry / Technology AFR Handling

**Vecoplan®**

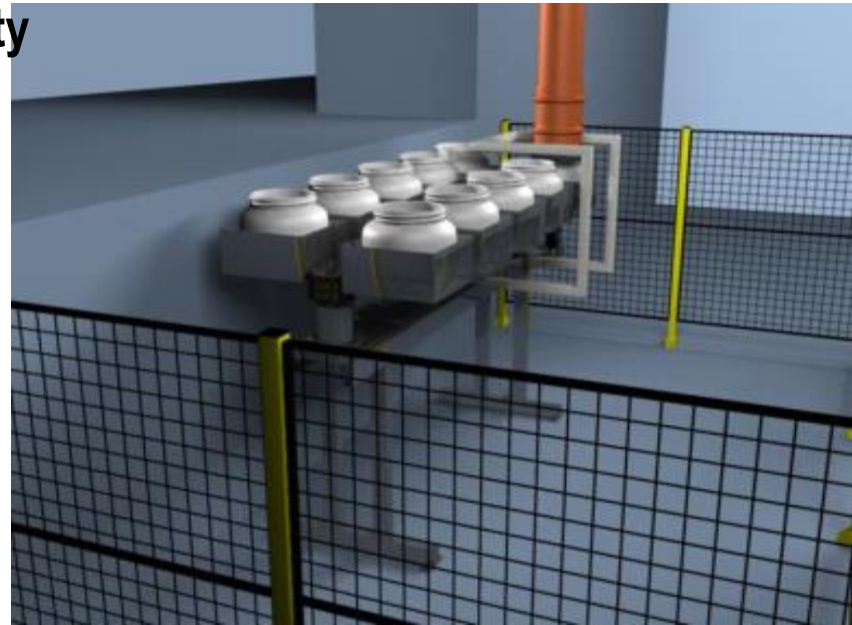
Handling  
&  
Dosing

### Automatic Sampling Station PE10

- Automatic installation for taking material samples
- 10 rotating plastic cups with an wide opening
- Guiding with a Duplex-chain
- Ensurance of countinous material quality
- Very usefull when material is delivered by various suppliers



Automatic Sampler



Automatic Sampling Station





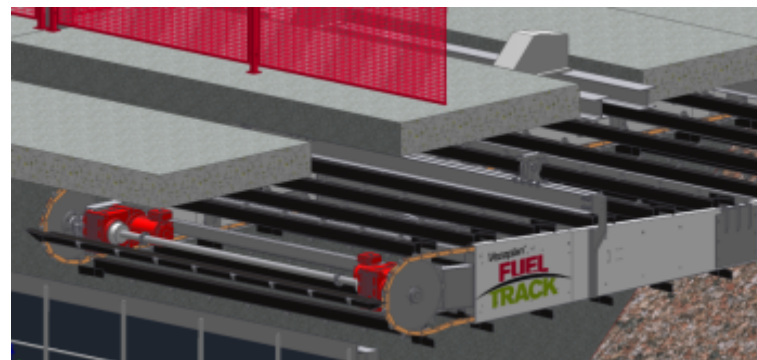
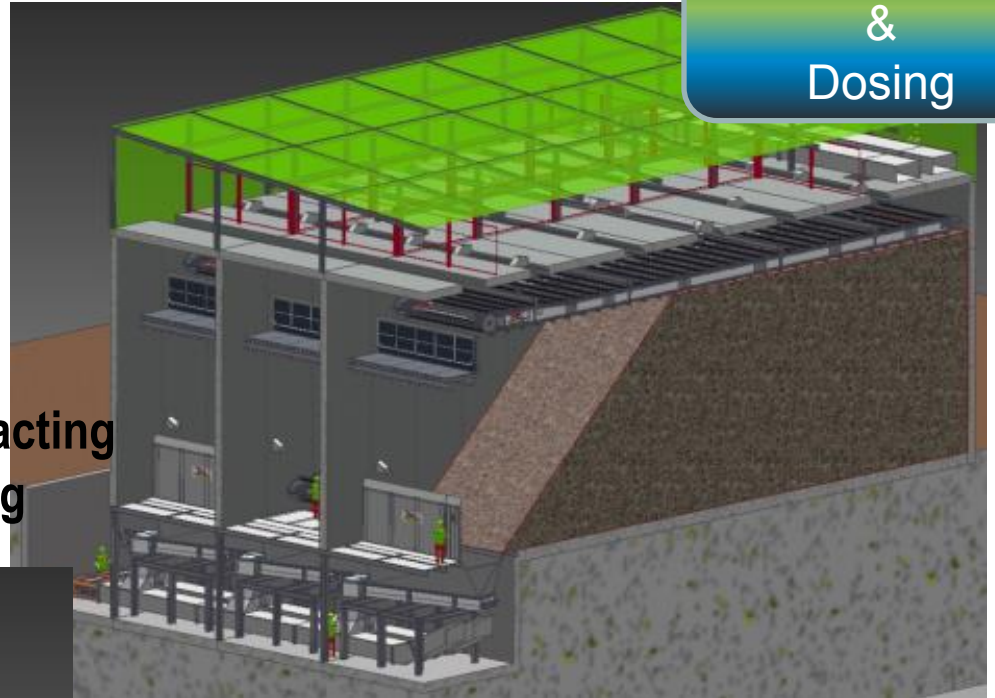
## 2. Product Range of Vecoplan for Recycling Industry / Technology AFR Handling

**Vecoplan®**

Handling  
&  
Dosing

Storage – Loading & Unloading Conveyor

- **Modular design**
- **Structural separate bays**
- **No efforts on discharge**
- **No dedusting**
- **Stock of various materials**
- **Higher stock of volume by self-compacting**
- **Simultaneous loading and discharging**



TECHNOLOGY FOR A SUSTAINABLE TOMORROW



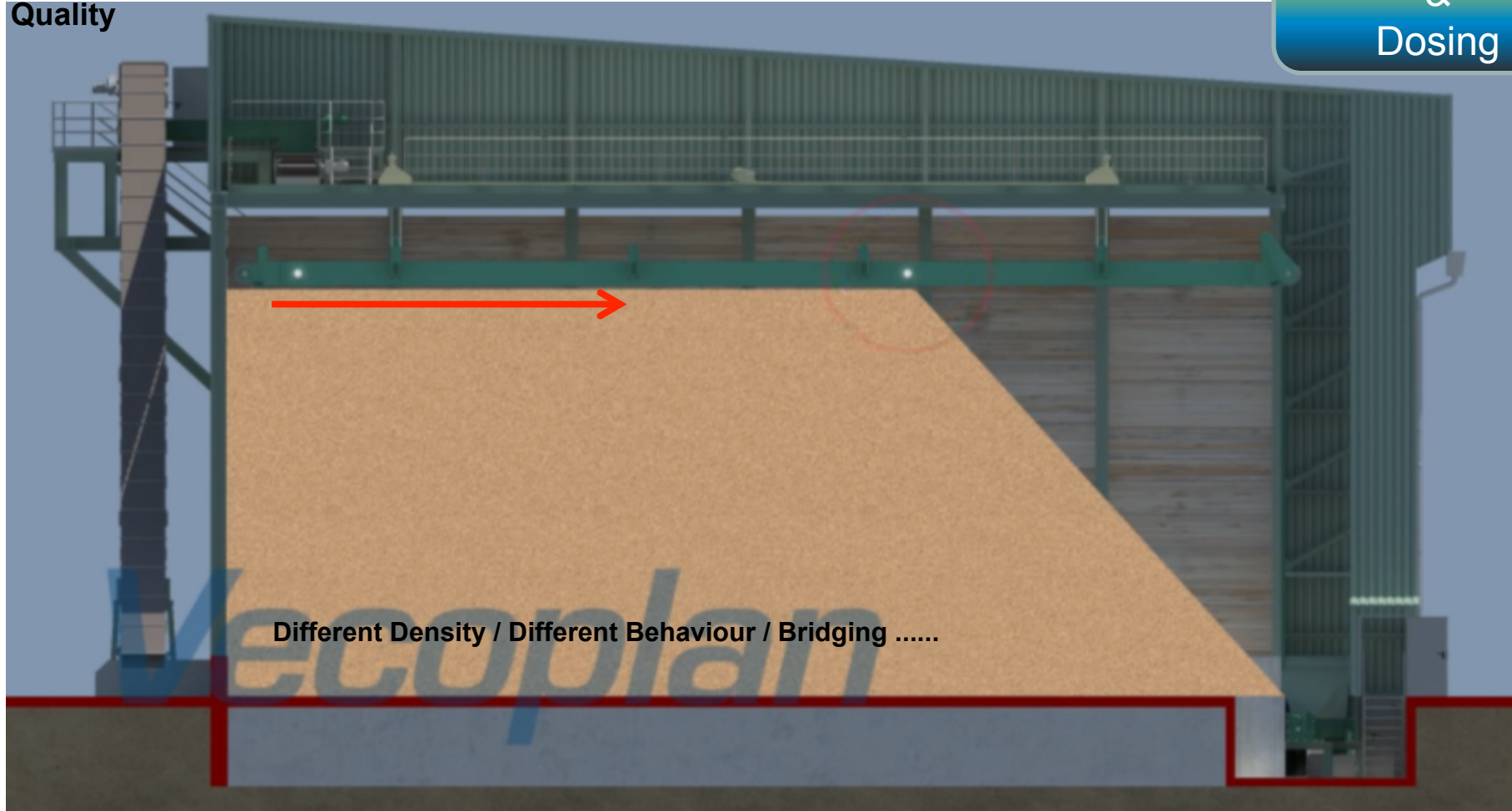


## 2. Product Range of Vecoplan for Recycling Industry / Technology AFR Handling

**Vecoplan®**

Handling  
&  
Dosing

Storage – Loading & Unloading Conveyor / Distribution of different Material Quality



Different Density / Different Behaviour / Bridging .....



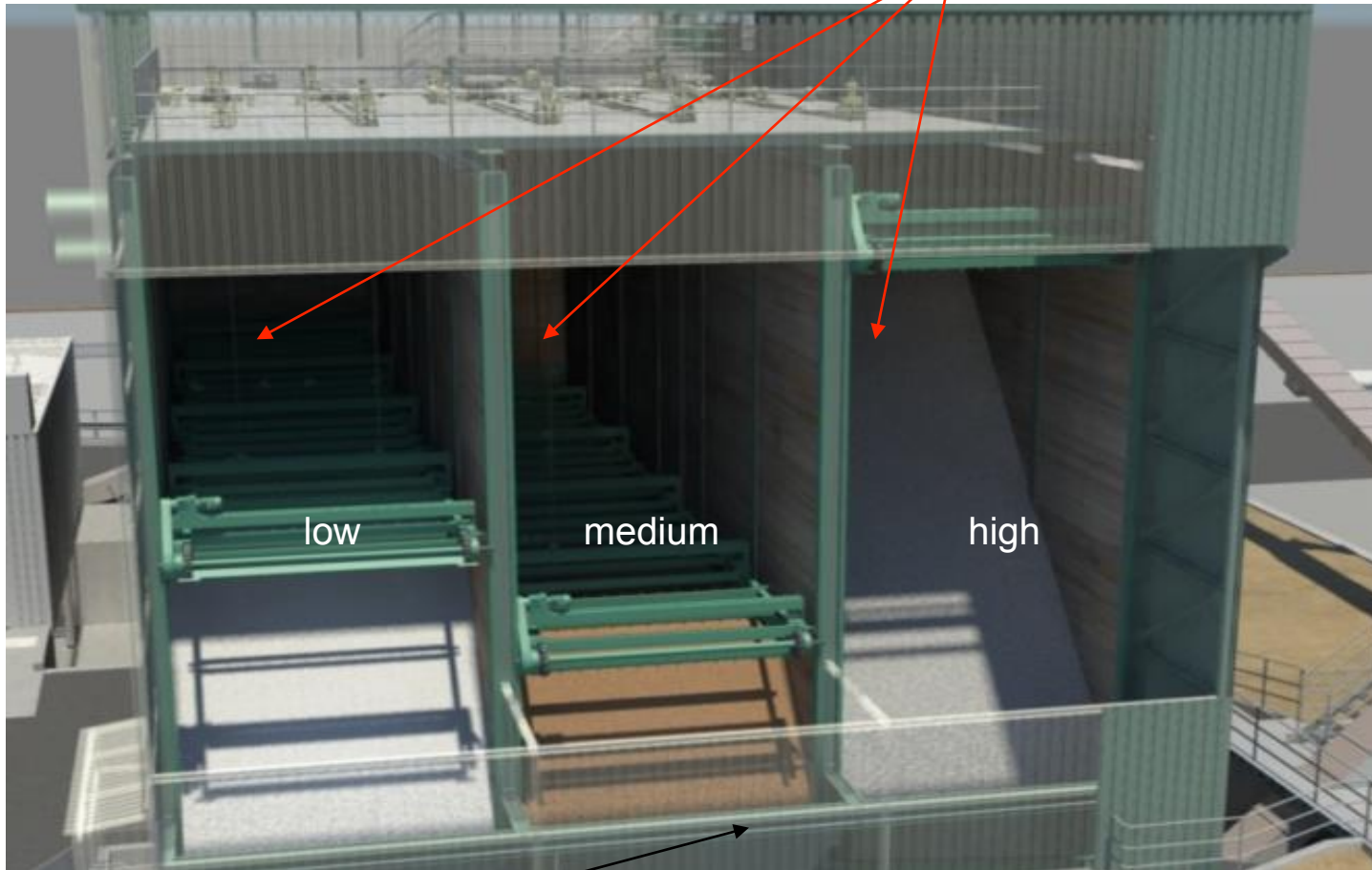
## 2. Product Range of Vecoplan for Recycling Industry / Technology AFR Handling

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Handling  
&  
Dosing

**Storage – Loading & Unloading Conveyor**

**Input:** sorting into different fuel qualities



**Output:** blending into a most possible consistent quality, managed by kiln control operators.



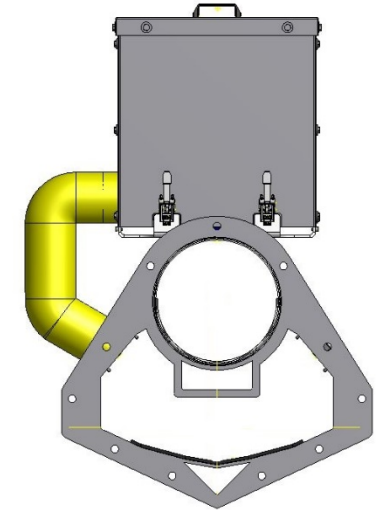
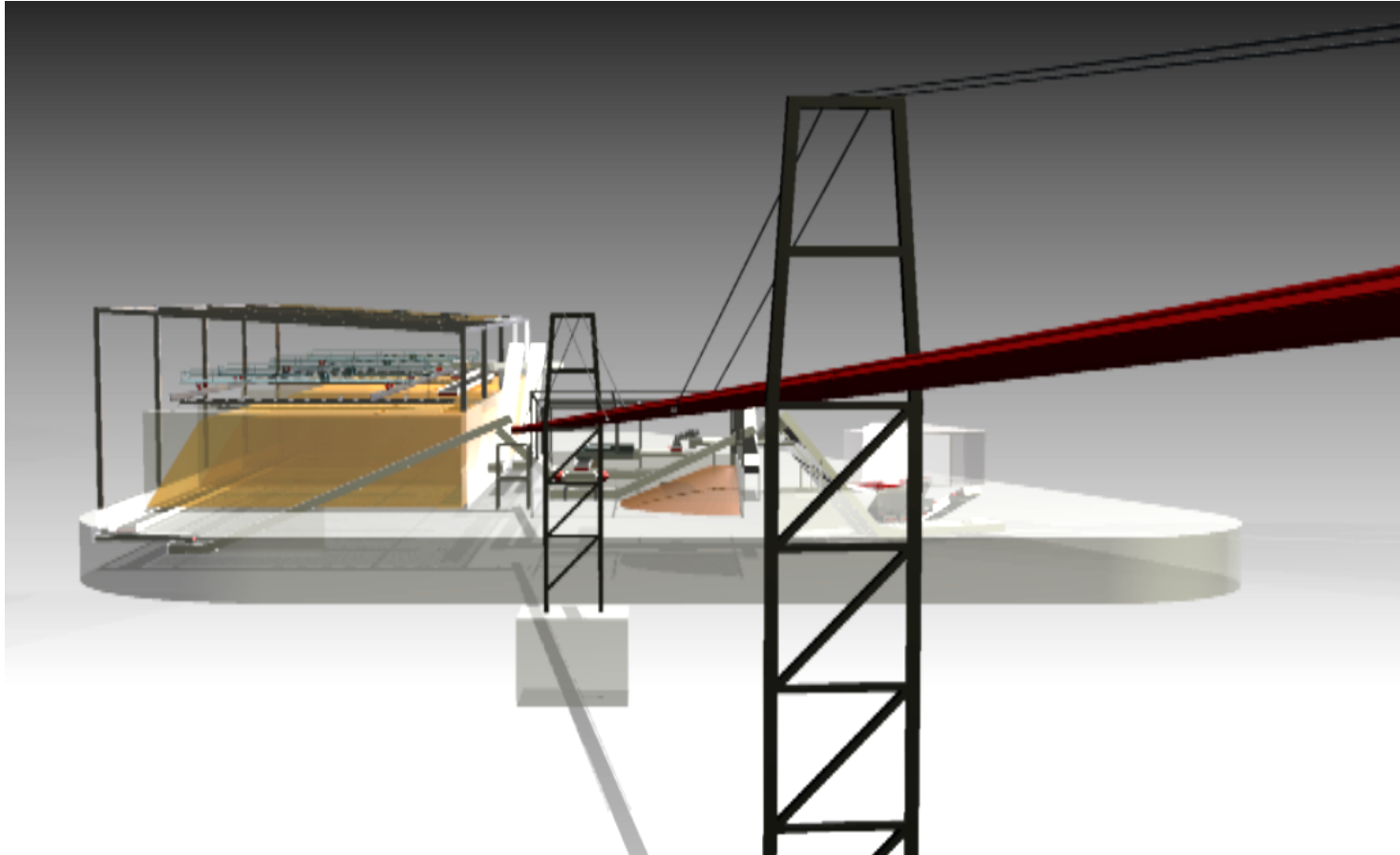
## 2. Product Range of Vecoplan for Recycling Industry / Technology AFR Handling



**Vecoplan®**

Handling  
&  
Dosing

### VecoBelt – Enclosed Long Distance Conveyor / VecoBelt – Design Layout



**Efficient to bridge long distances !!!**

Competence in AFR Co-Processing

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## 2. Product Range of Vecoplan for Recycling Industry / Technology AFR Handling



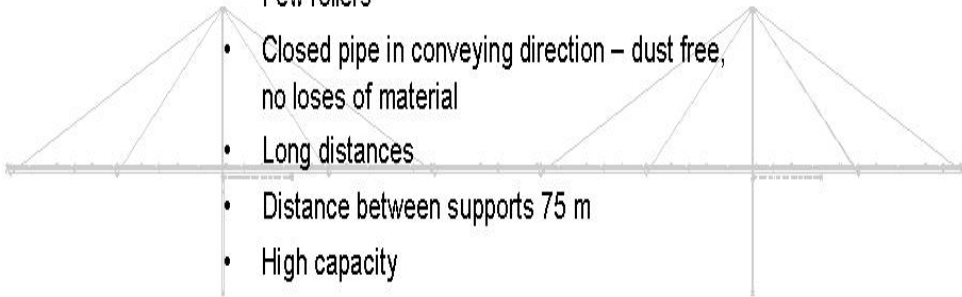
**Vecoplan®**

Handling  
&  
Dosing

VecoBelt – Enclosed Long Distance Conveyor / VecoBelt – Design Layout

- Low friction due to the gliding belt on air cushion
- Low power consumption
- Few rollers
- Closed pipe in conveying direction – dust free, no losses of material
- Long distances
- Distance between supports 75 m
- High capacity

closed system = no dust and air emission  
air cushion effect = low energy consumption  
no track wheels = low maintenance efforts



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## 2. Product Range of Vecoplan for Recycling Industry / Technology AFR Handling

Vecojector / Efficient Injection

**Vecoplan**<sup>®</sup>

Handling  
&  
Dosing

Intermediate hopper



- A Swirler to ensure a continuous material feeding to the calciner
- Avoiding of pulsating feeding
- Destroying of agglomerations

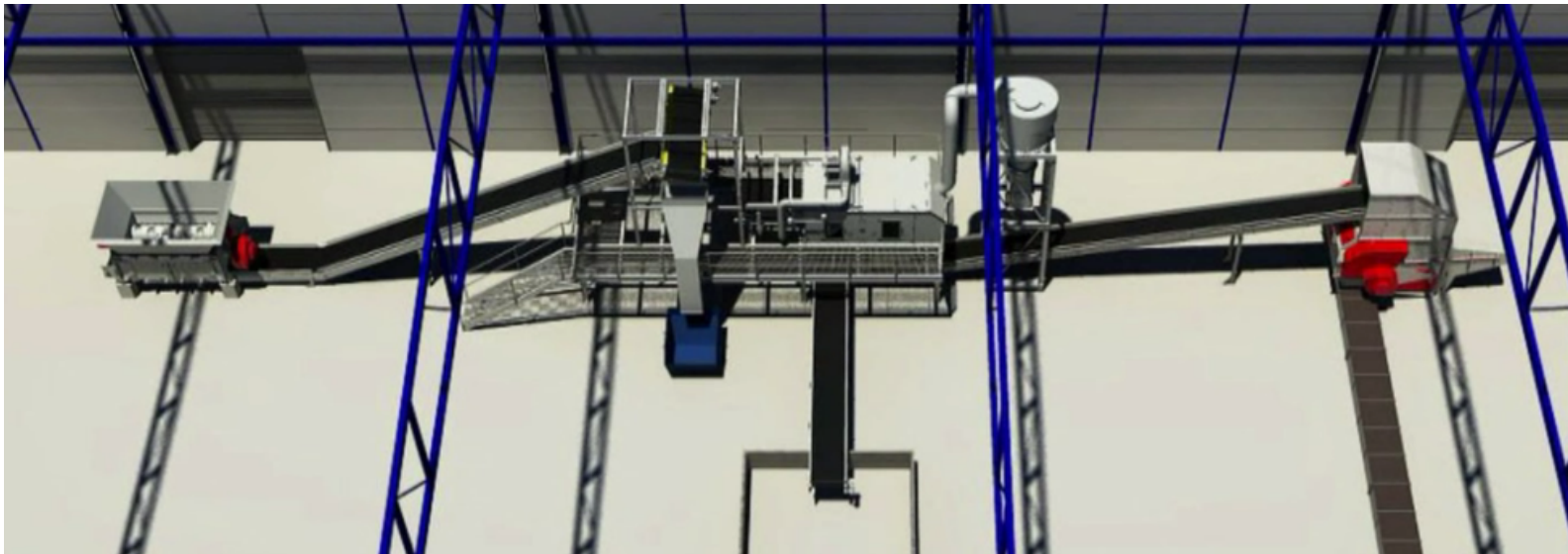
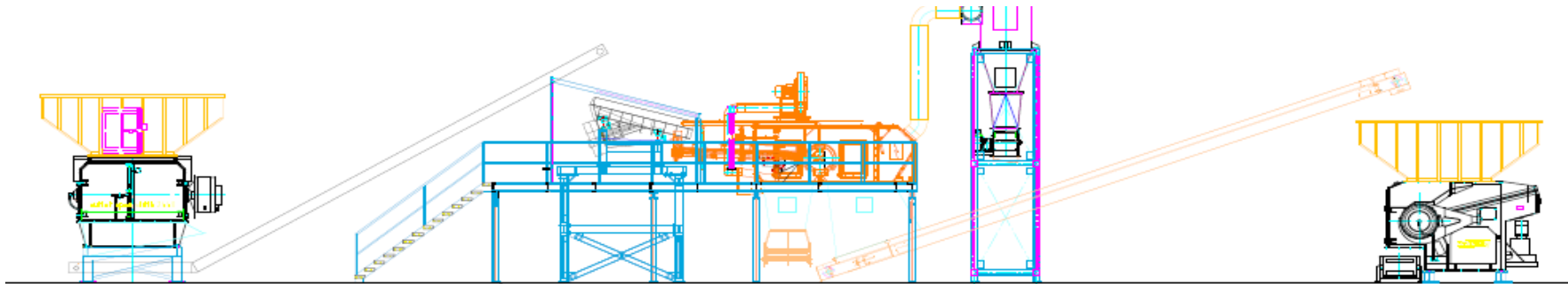


### 3. Case Study II RDF/CDR Preparation from different waste streams

**Vecoplan®**

RDF preparation from C&I waste for Main  
Burner LAFARGE SERBIA

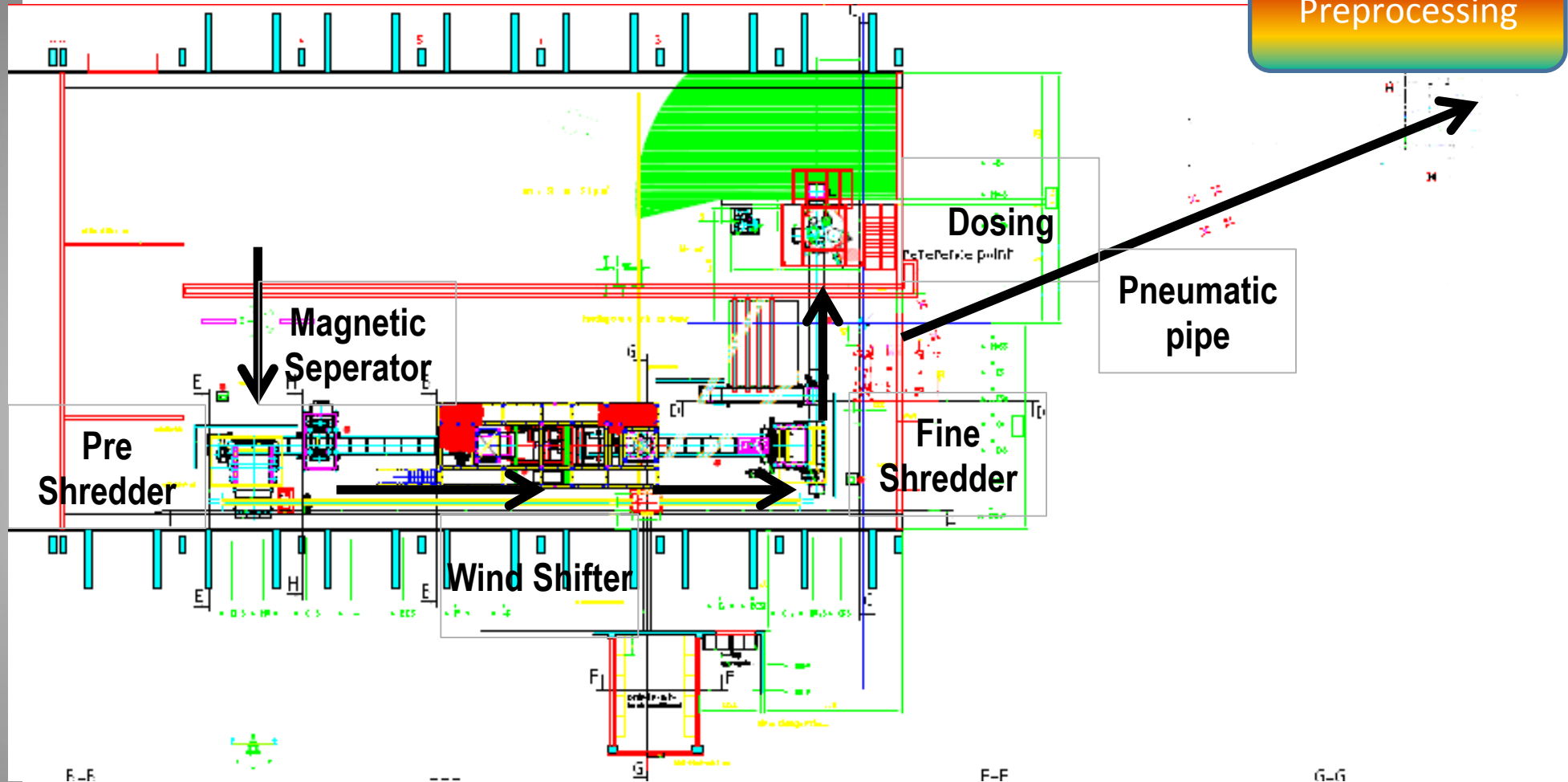
Preprocessing





### 3. Case Study II RDF/CDR Preparation from different waste streams

#### RDF preparation from C&I waste for Main Burner LAFARGE SERBIA



### 3. Case Study II RDF/CDR Preparation from different waste streams

RDF preparation from C&I waste for Main Burner LAFARGE  
SERBIA

**Vecoplan**<sup>®</sup>

Preprocessing



Competence in AFR Co-Processing

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### 3. Case Study III RDF storage and handling



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#### RDF Handling Mainburner & Calciner / Irish Cement

Handling  
&  
Dosing

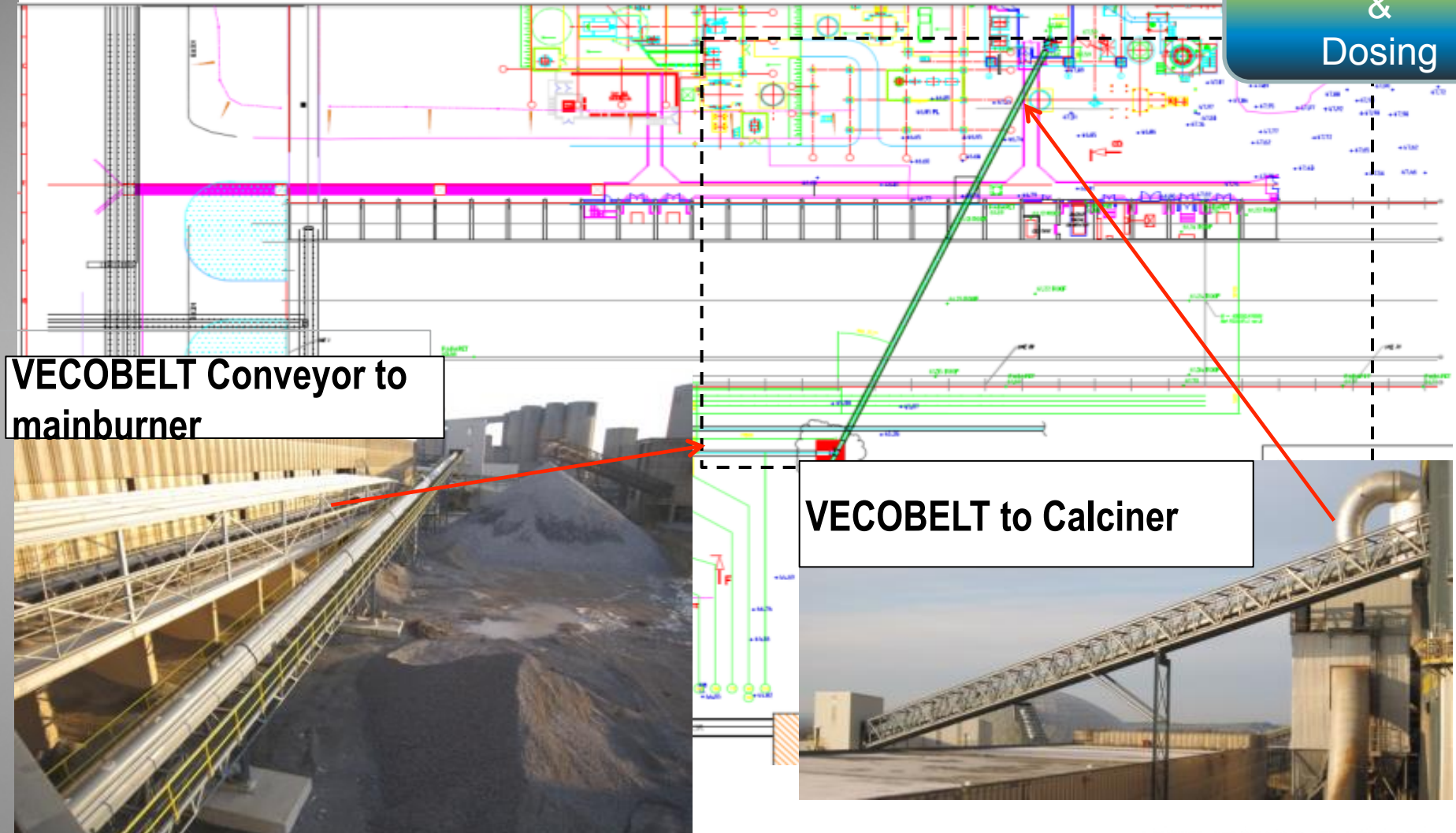




### 3. Case Study RDF storage and handling

**Vecoplan®**

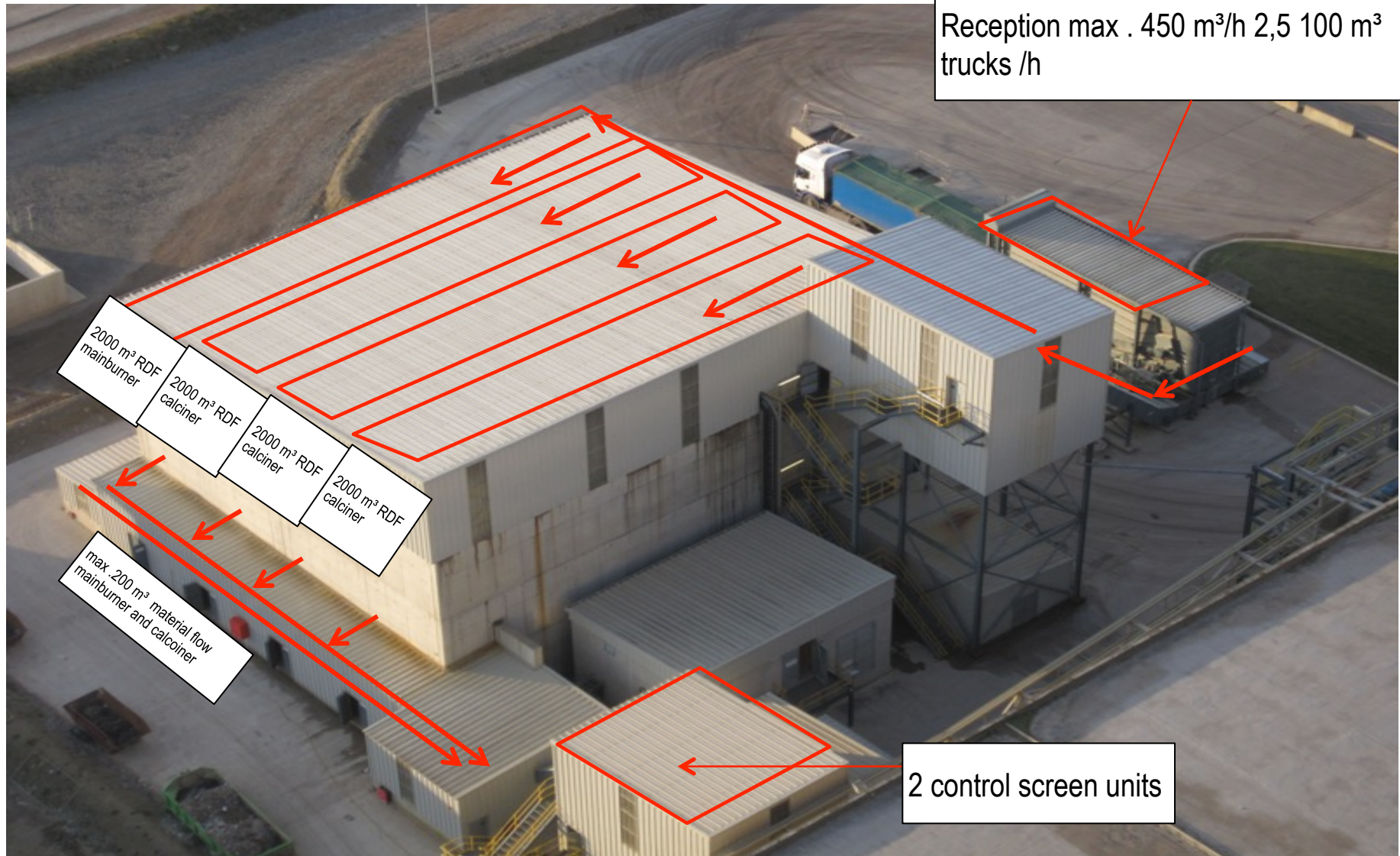
Handling  
&  
Dosing



### 3. Case Study RDF storage and handling

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Reception max . 450 m<sup>3</sup>/h 2,5 100 m<sup>3</sup>  
trucks /h





### 3. Case Study III RDF storage and handling

Handling  
&  
Dosing

Reception max . 450 m<sup>3</sup>/h 2,5 100  
m<sup>3</sup> trucks /h

2000 m<sup>3</sup> RDF  
calciner

2000 m<sup>3</sup> RDF  
mainburner

2000 m<sup>3</sup> RDF  
mainburner

2000 m<sup>3</sup> RDF  
calciner

2000 m<sup>3</sup> RDF  
calciner

2000 m<sup>3</sup> RDF  
calciner

max .200 m<sup>3</sup> material flow  
mainburner and calciner

2 control screen units

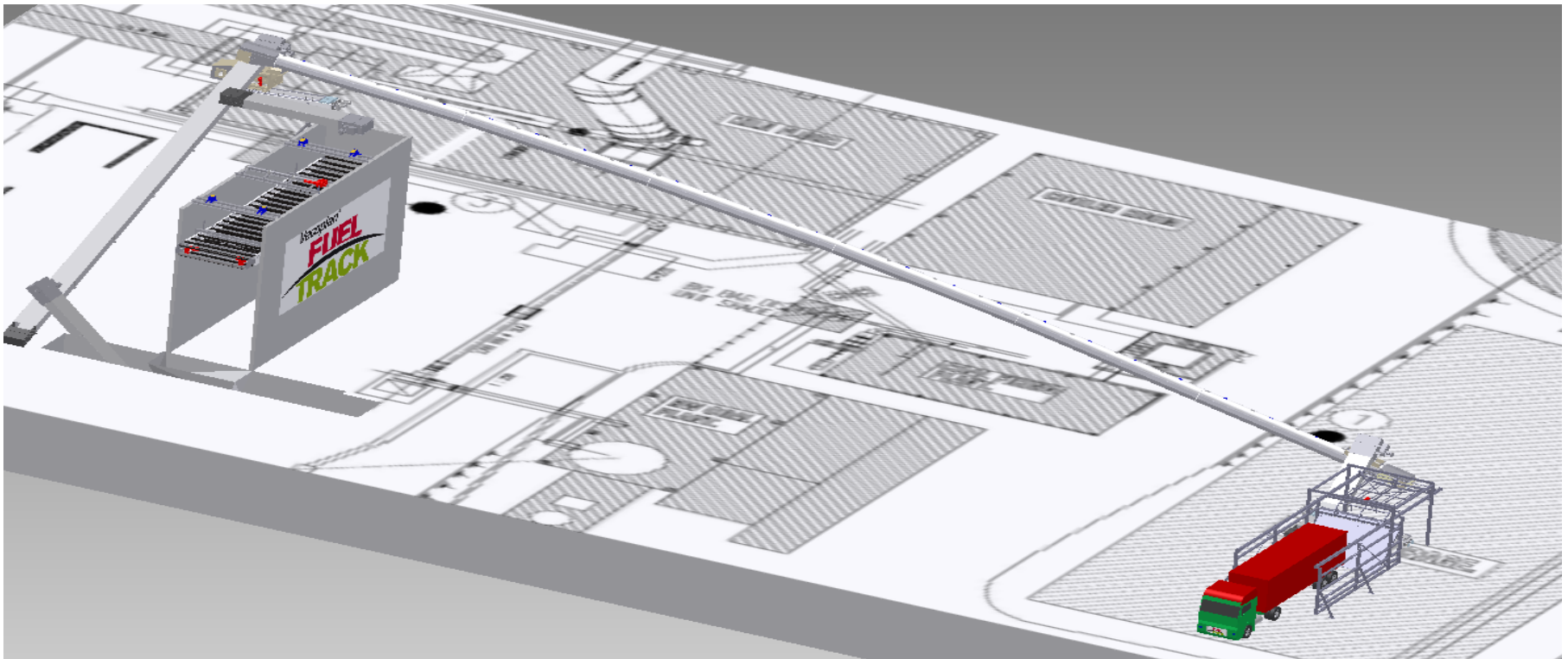


## 4. Engineering - Modular Design – Taylor made Systems

Step 1 - Design Study with one Storage bay ( 1000 m<sup>3</sup>)

**Vecoplan**<sup>®</sup>

Engineering



## 4. Engineering - Modular Design – Taylor made Systems

Step 2 - Design Study with Two Storage bay (2000 m<sup>3</sup>)

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Engineering

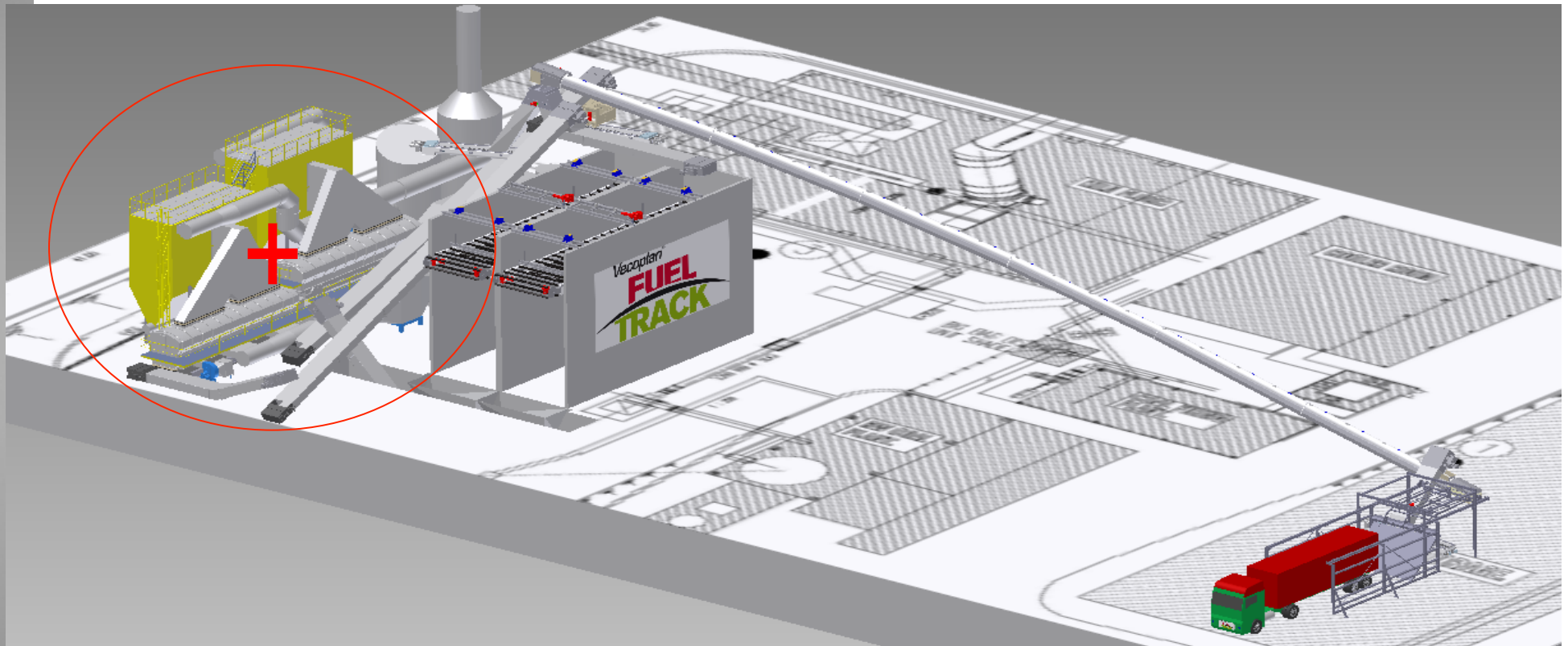


## 4. Engineering - Modular Design – Taylor made Systems

**Vecoplan®**

Step 3 - Design Study with Two Storage bay + Direct Drying Concept

Engineering





We think in processes!

**Vecoplan®**



**Thank You For Your Attention**  
**[www.vecoplan.com](http://www.vecoplan.com)**

**Please contact in case of any questions:**

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