terdesol

THE ULTIMATE RECYCLING SOLUTION

Financováno Evropskou unií
NextGenerationEU

T A
Č R

The TERDESOL pilot project is being co-financed with the support of the Czech State Technology Agency within the framework of the SIGMA programme.

www.tacr.cz

Research useful for society.

Our technology was developed in cooperation with:

Czech Academy of Sciences

UNIVERSITY OF PARDUBICE
FACULTY OF CHEMICAL TECHNOLOGY

Department of Power Engineering
UCT Prague

What is Terdesol?

a revolutionary technology for the efficient treatment of all waste

- all municipal waste
- tires
- plastic
- laundry sludge
- paint sludge from car paint shops
- paper sludge
- oil sludge
- sludge from sewage treatment plants
- agricultural and garden waste
- hospital generated waste
- biomass and wood waste

VALUABLE RAW MATERIALS

What is circular economy?

- every European consumes 14 tons of raw materials per year
- every European generates 500 kg of municipal waste per year
- every year 2.5 billion tons of waste are generated in the EU

The EU Parliament wants to put an end to the linear model which has been dominant since the Industrial Revolution:

TAKE - MAKE - CONSUME - THROW AWAY

The aim is to create a new, endless recovery cycle for all raw materials, including waste:

WASTE TURNS INTO RAW MATERIAL

- extending product life cycles
- reducing greenhouse gas emissions
- creating opportunities for innovation and job growth

Conversion of waste
into valuable raw materials and energy

Municipal waste

terdesol

- oil
- iron
- gas
- carbon
- fine gravel
- thermal energy
- electric energy
- garden fertilizer
- hydrogen
- crushed glass
- high calorific pellets
- non-ferrous metals

Thanks to our patented technology, 97% of all waste is recovered for reuse


terdesol
absorbs and processes all waste...


...making the **elimination**
of municipal landfills a **reality**

Terdesol intelligently extracts all raw materials from waste, making the system profitable without burdening municipal budgets

With our technology, the quality of the output products is consistent, guaranteeing their marketability


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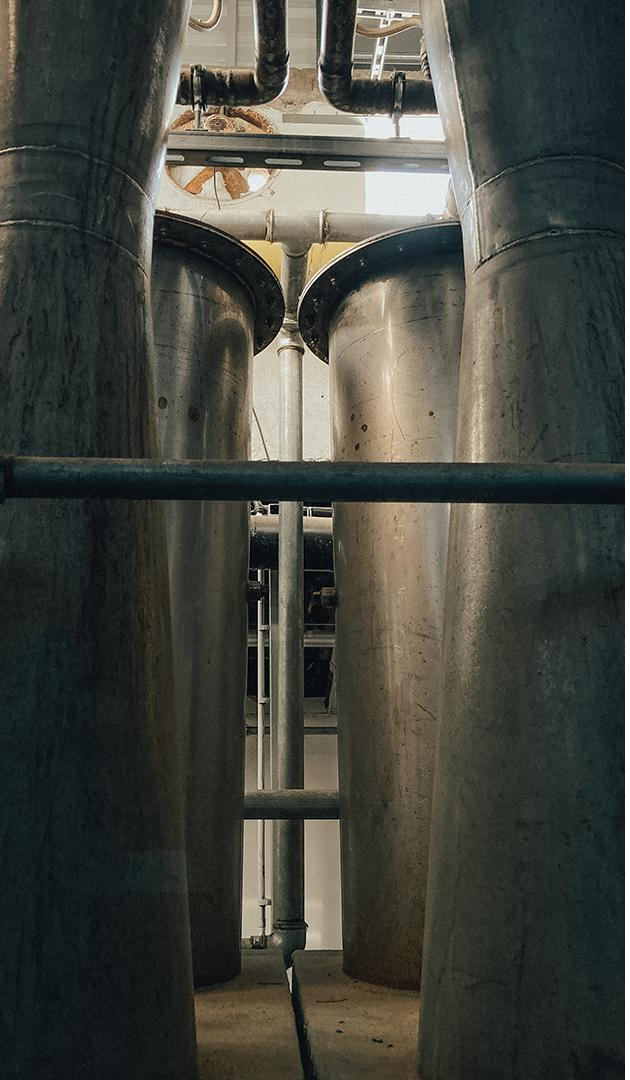
What sets us apart from the competition

- we have modified and optimized existing technologies to achieve maximum efficiency of waste processing
- our patented thermochemical process management software, **Terdesol Pro-Core V**, ensures that all systems operate flawlessly and in perfect synchronisation
- our solution is proven by the implementation and successful operation of existing projects in many countries worldwide




150
200
250
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TEDOM
Combined Heat & Power


TECHNOLOGICKÁ VODA
CHLADÍCÍ VODA
VFD


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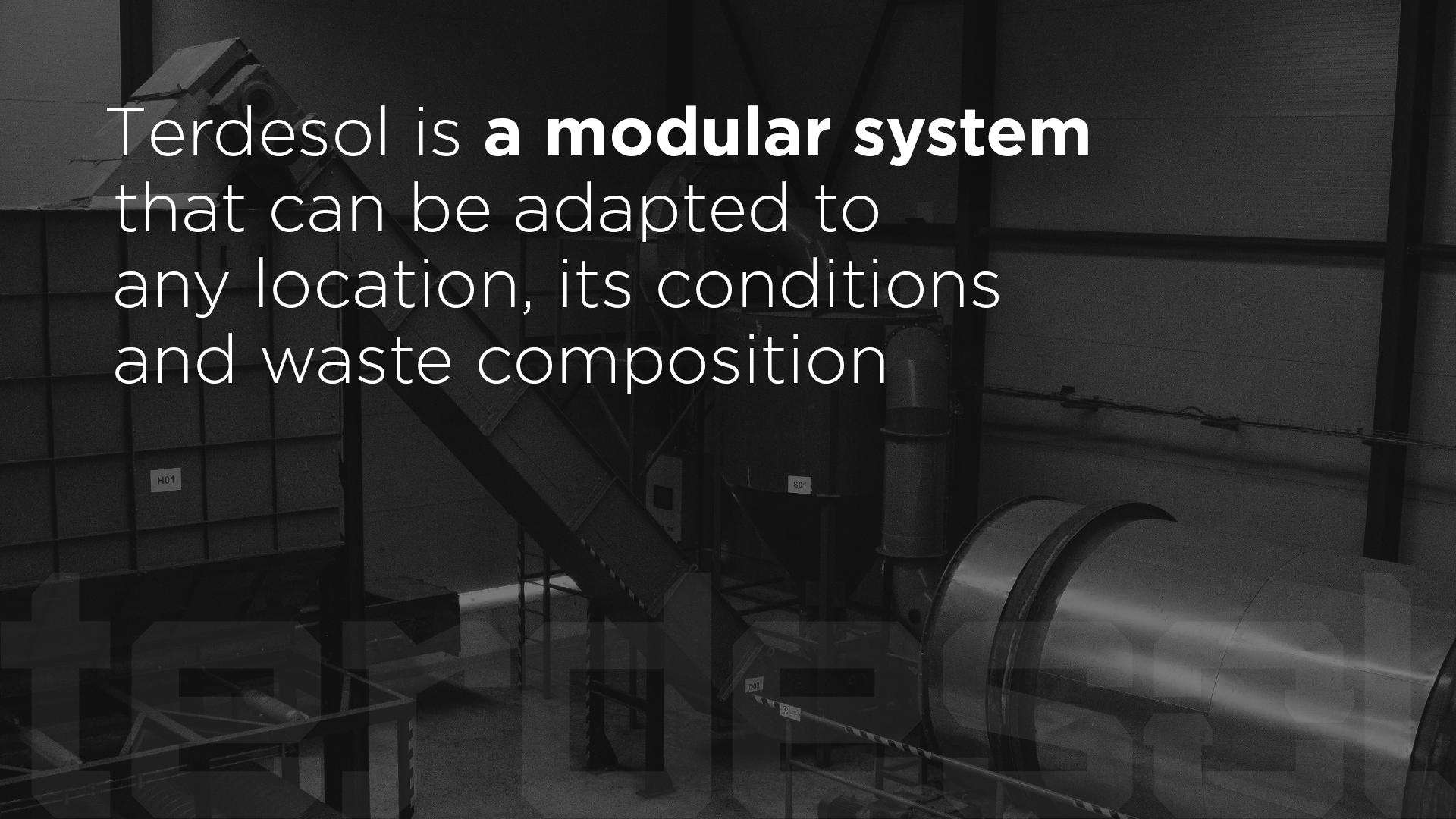

Terdesol is **a modular system** that can be adapted to any location, its conditions and waste composition


zephyr
zephyr


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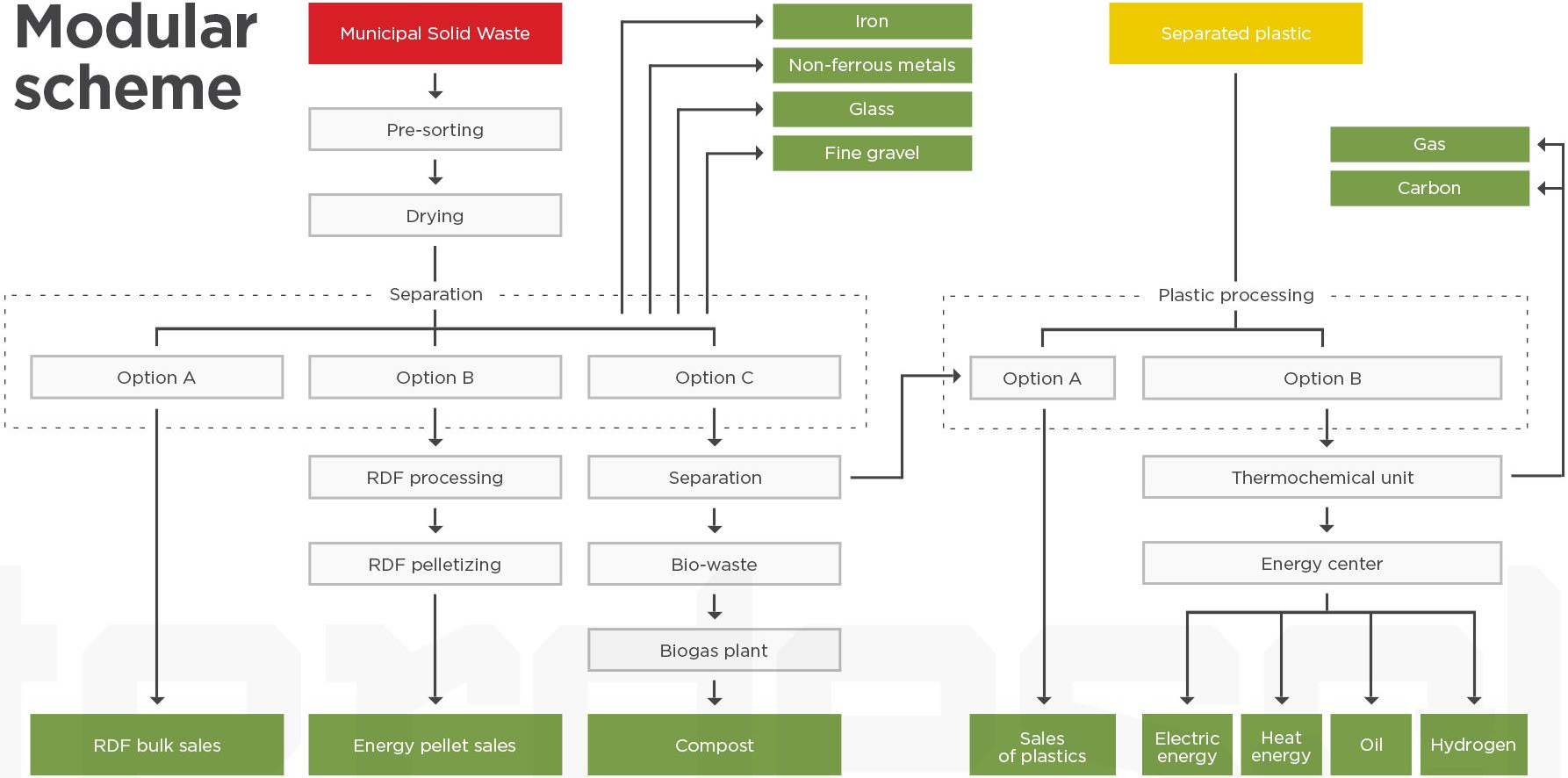
Terdesol contains the following principal modules:

- Unit for sorting and separation utilizing special technological-optical sensors
- Material pre-treatment technology including in-house developed shredder
- Waste treatment plant for cleaning, drying, separation and agglomeration, and the subsequent preparation for further processing or sales (e.g. PET granulate)
- Pelletizing line for further treatment of shredded combustibles gained from municipal solid waste (MSW)
- Biogas plant for efficient processing and treatment of organic materials for energy use
- Thermochemical unit for processing of sorted plastics from MSW, PET and granulate tires (output is energy fuel)
- Gas processing equipment used for electricity generation (gas results from composting and thermochemical waste treatment)

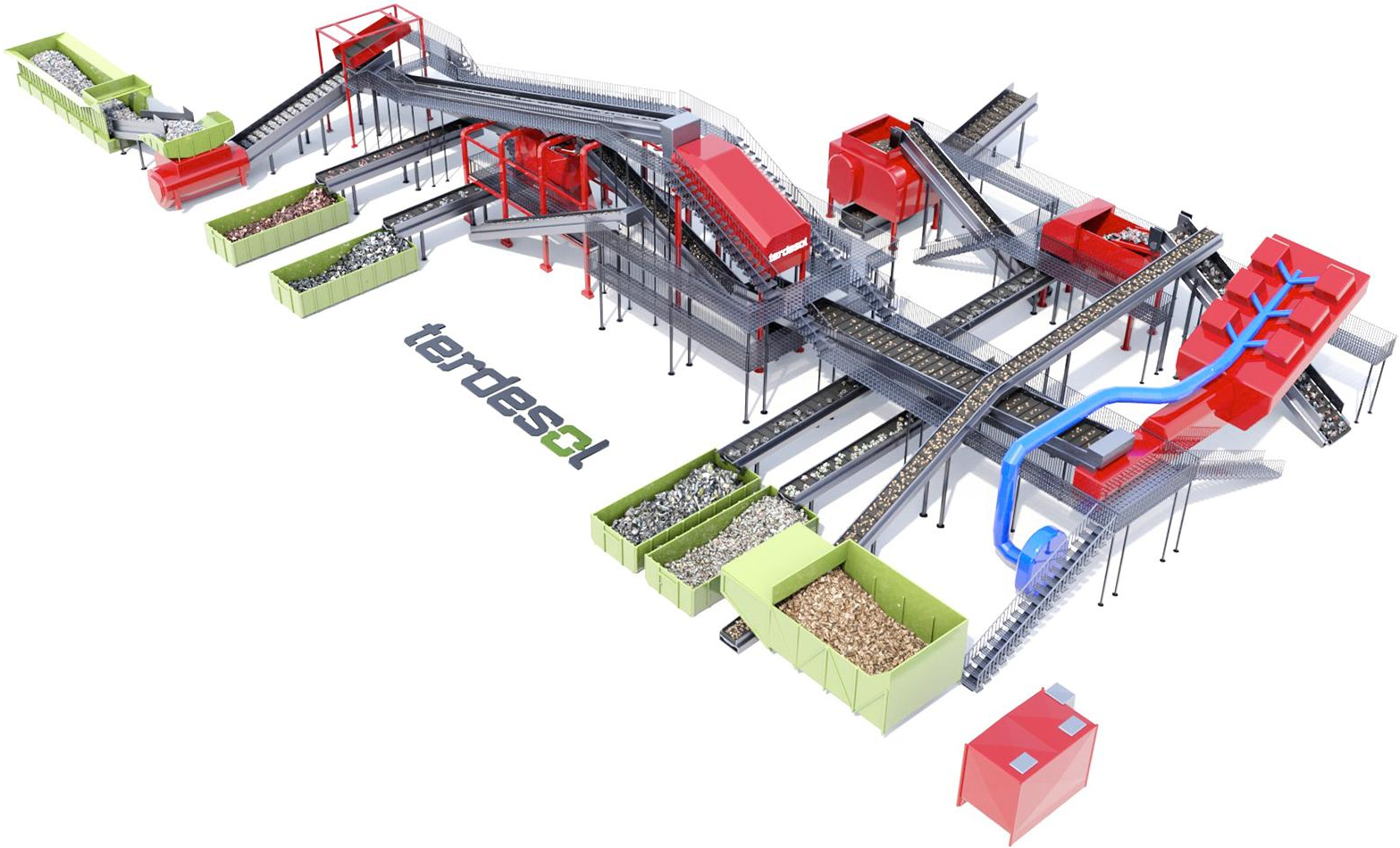
Modular scheme



Sorting hall

terdesol


terdesol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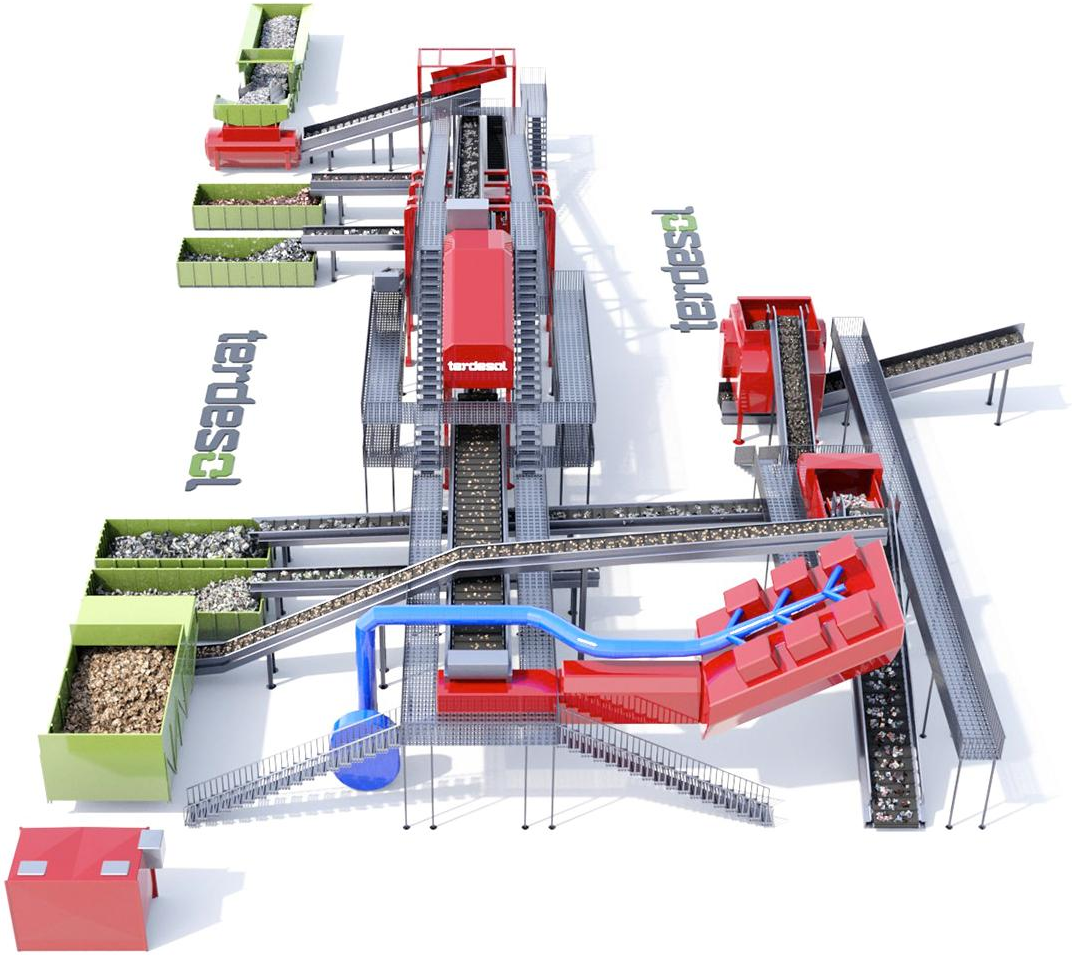
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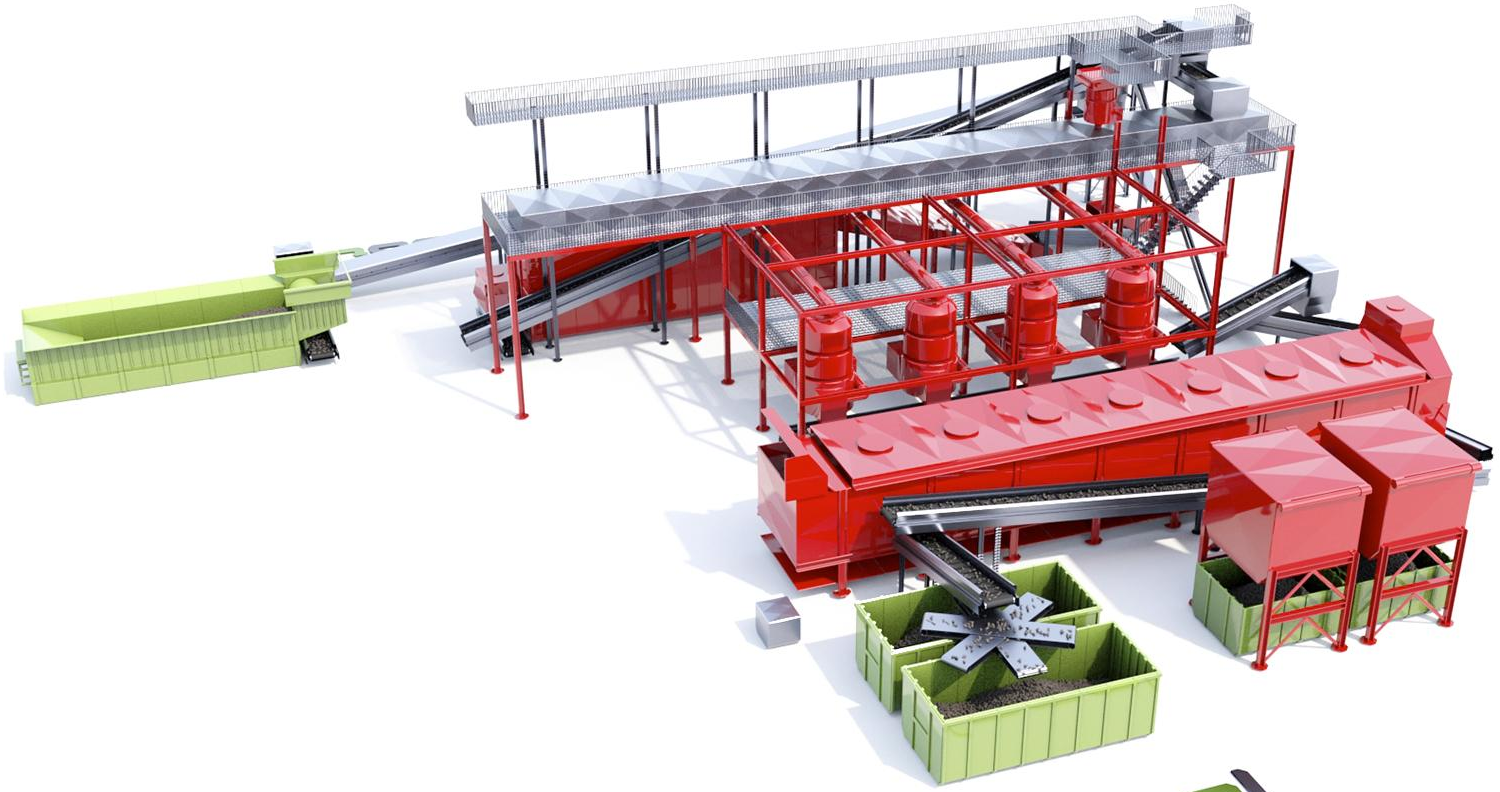
Granulation hall



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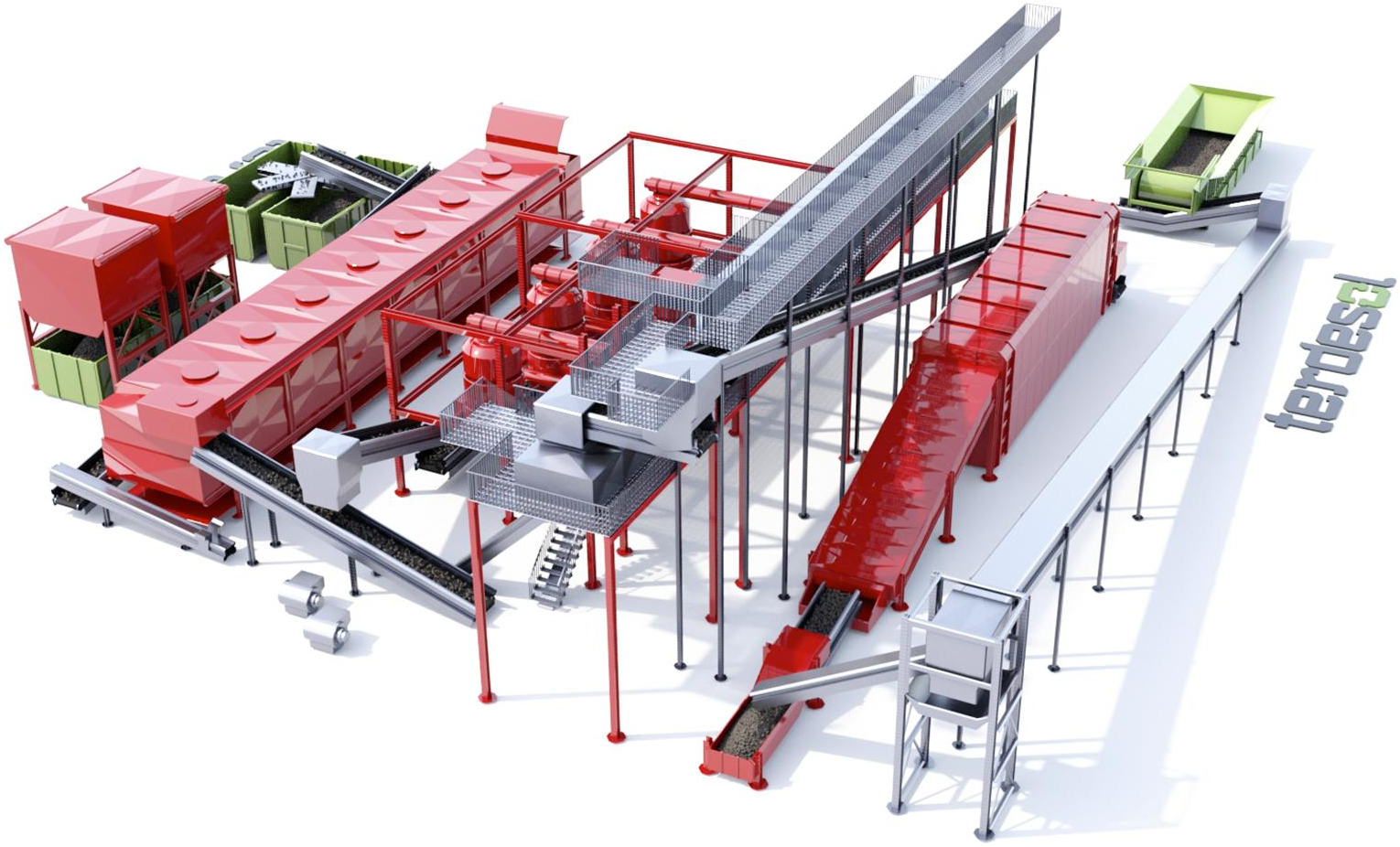
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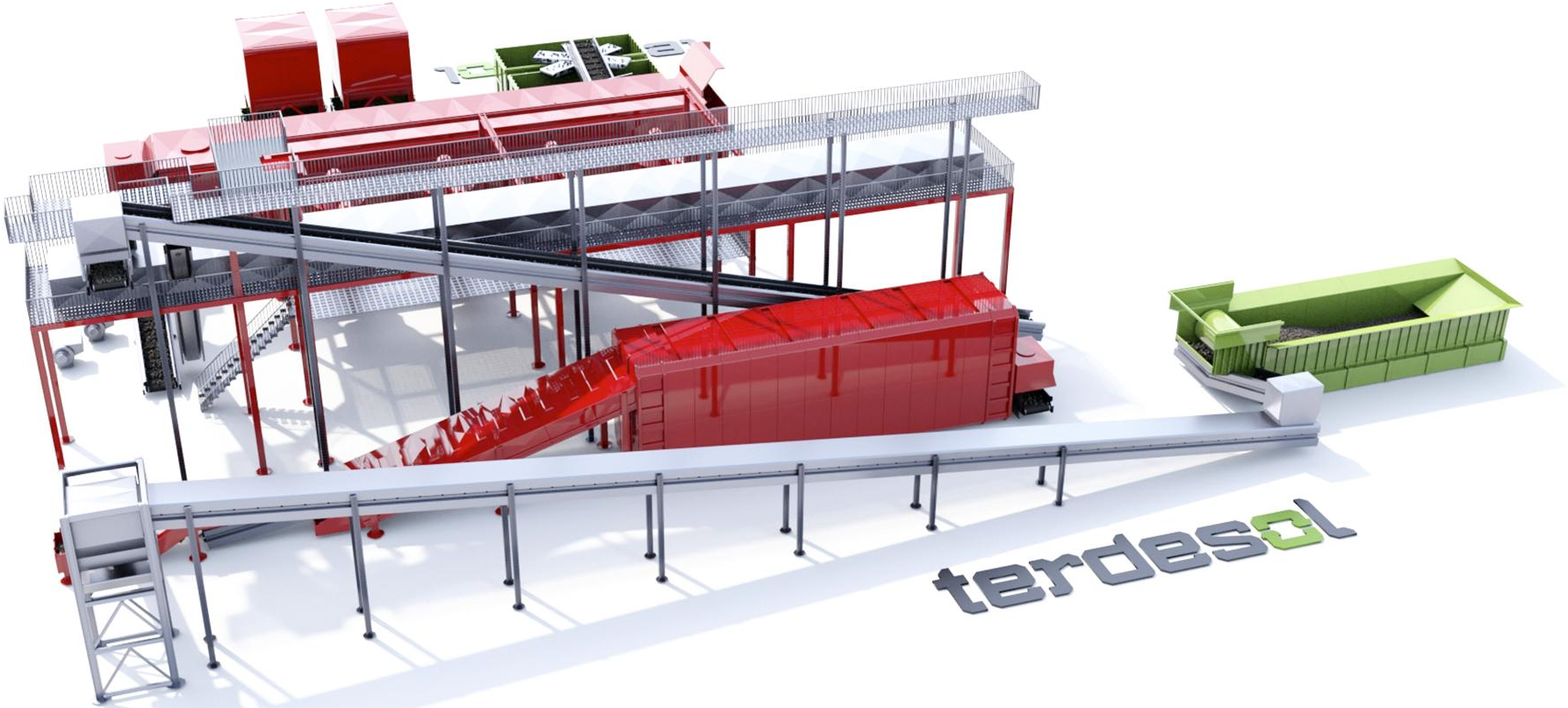
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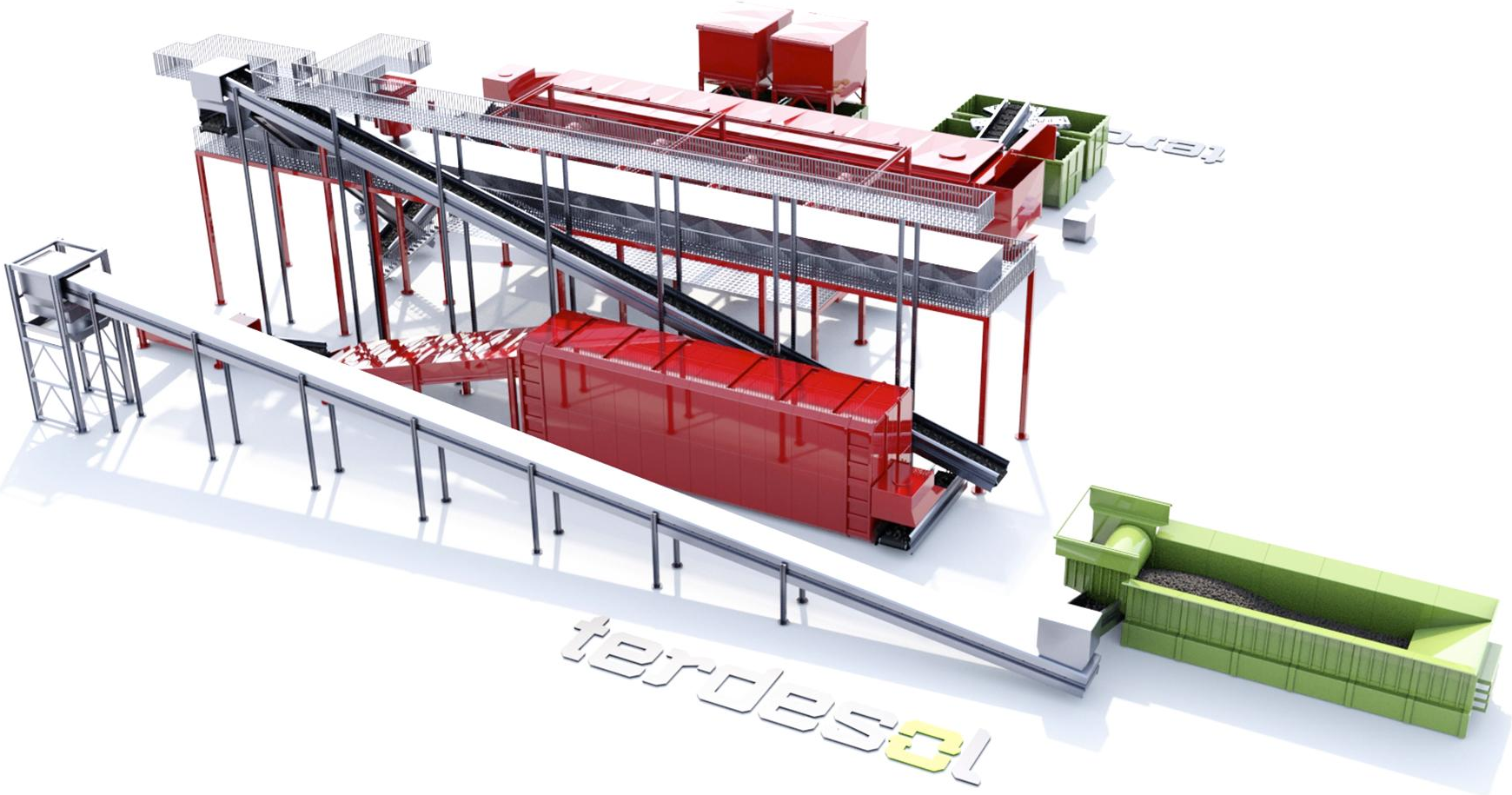
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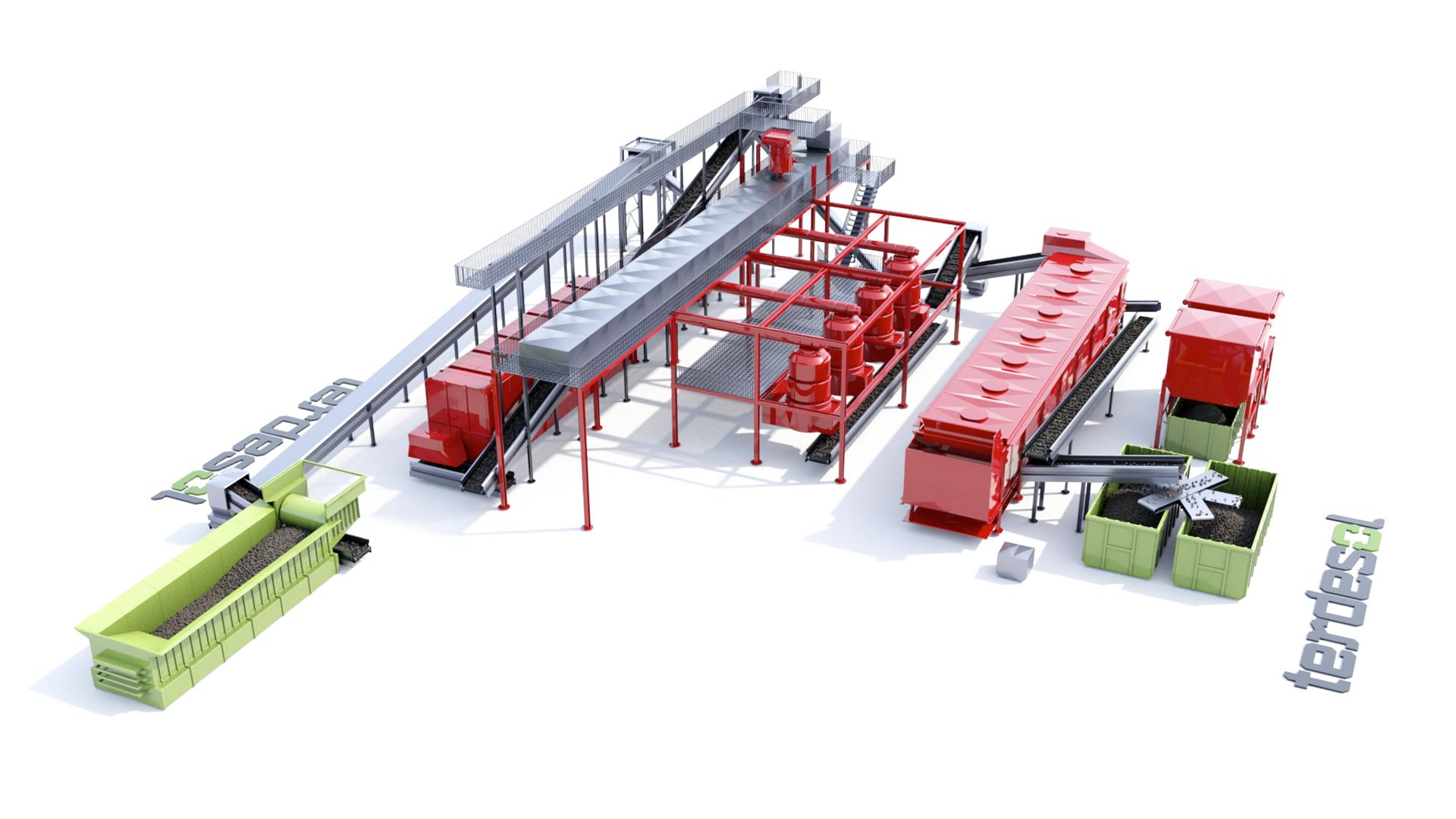
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Thermochemical unit

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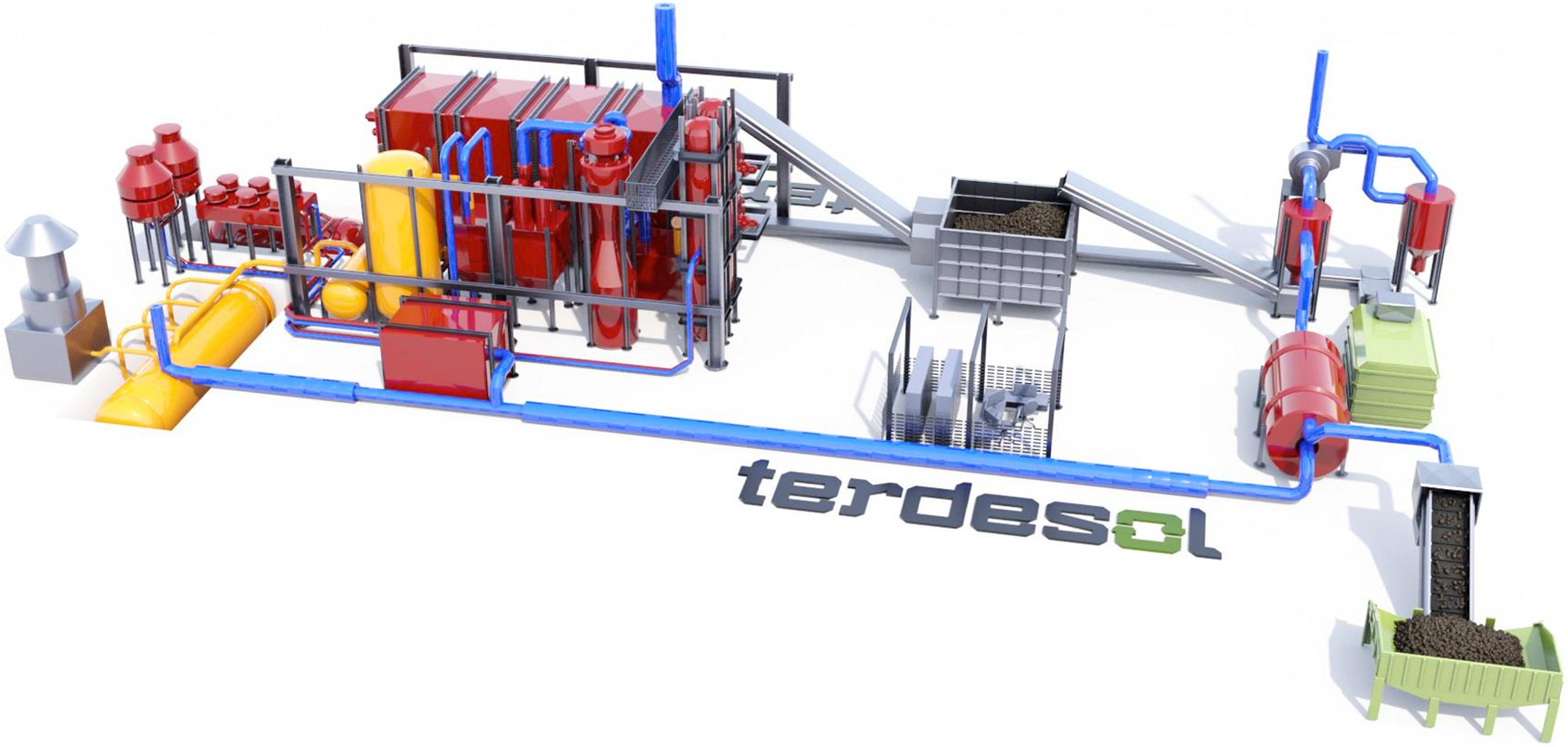
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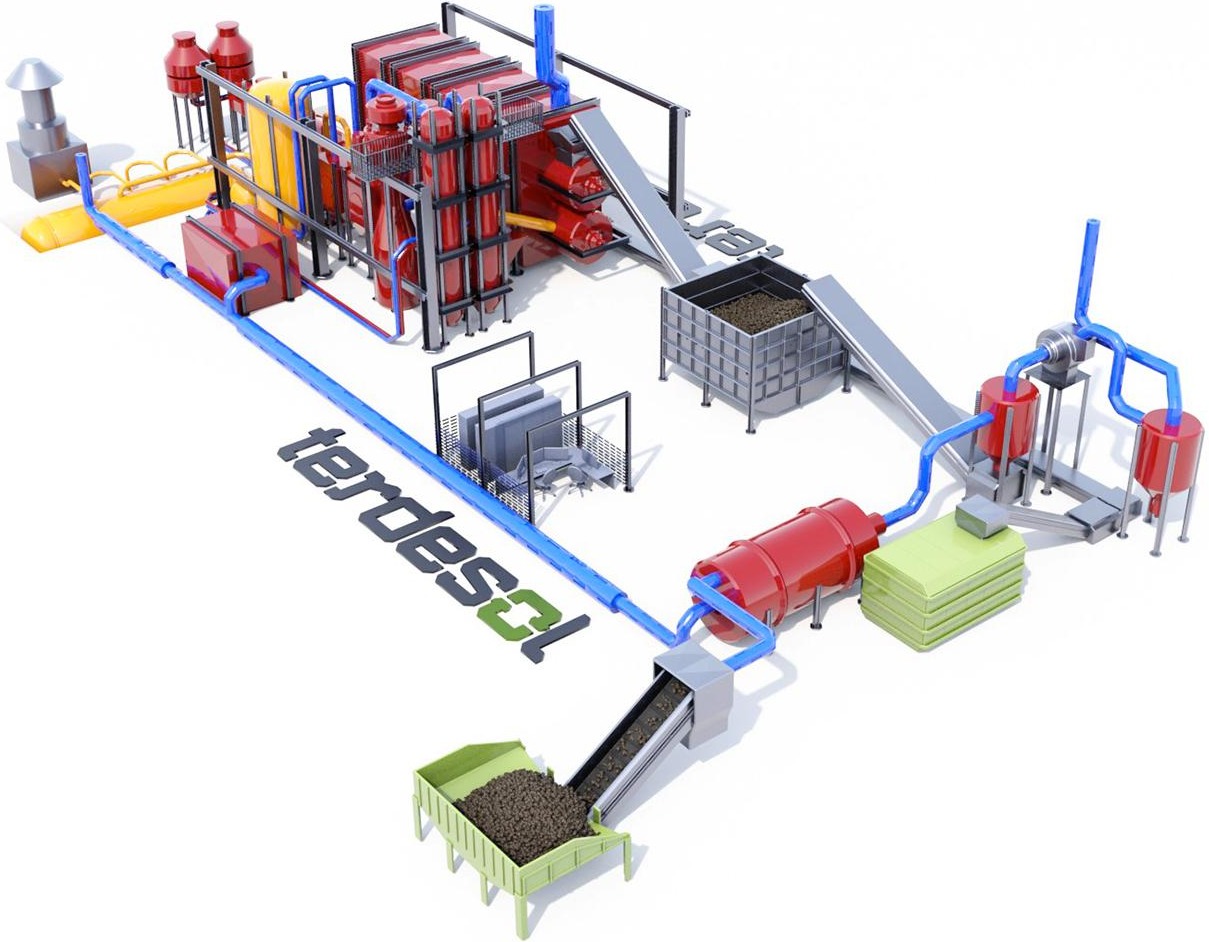
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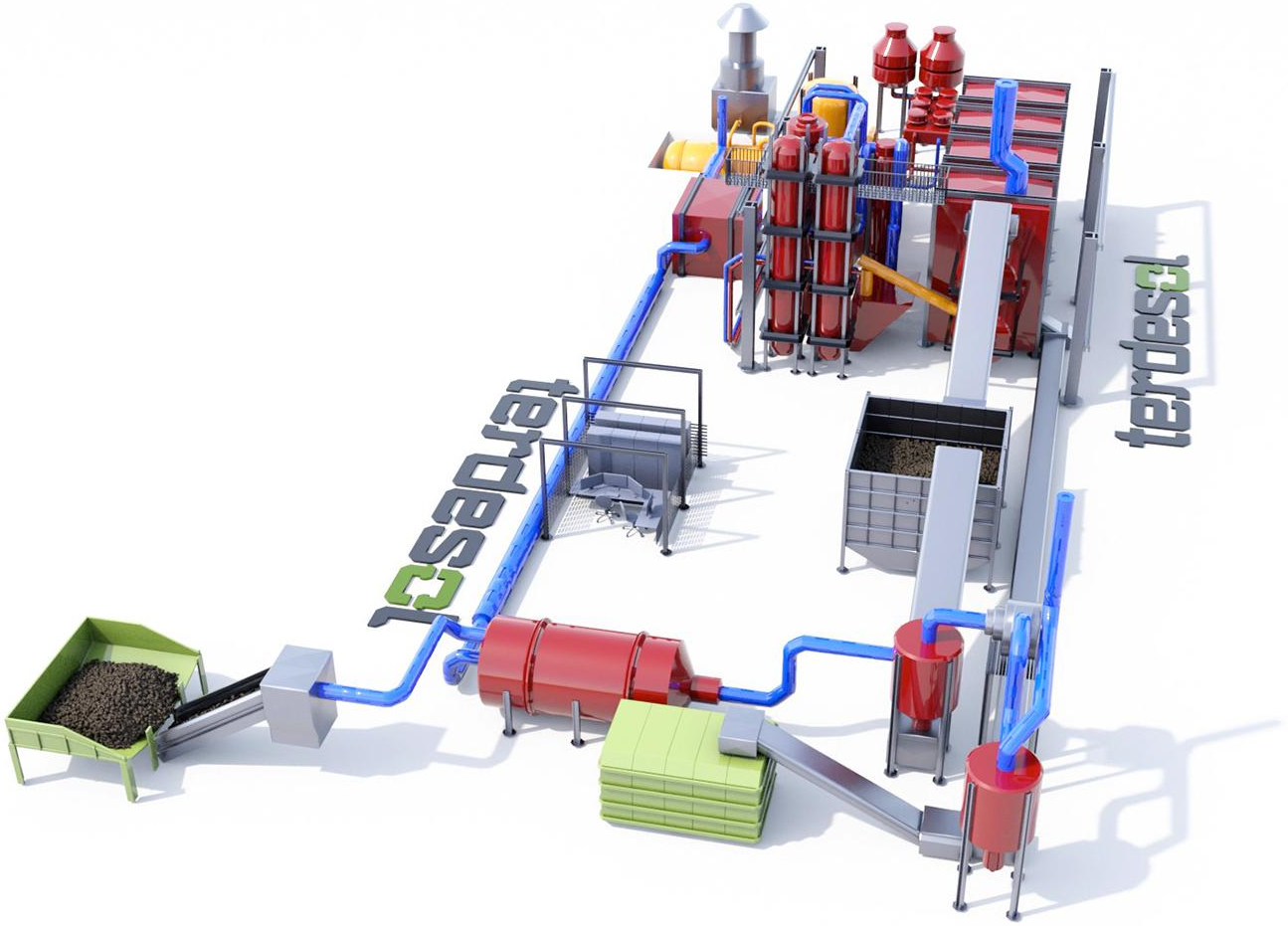
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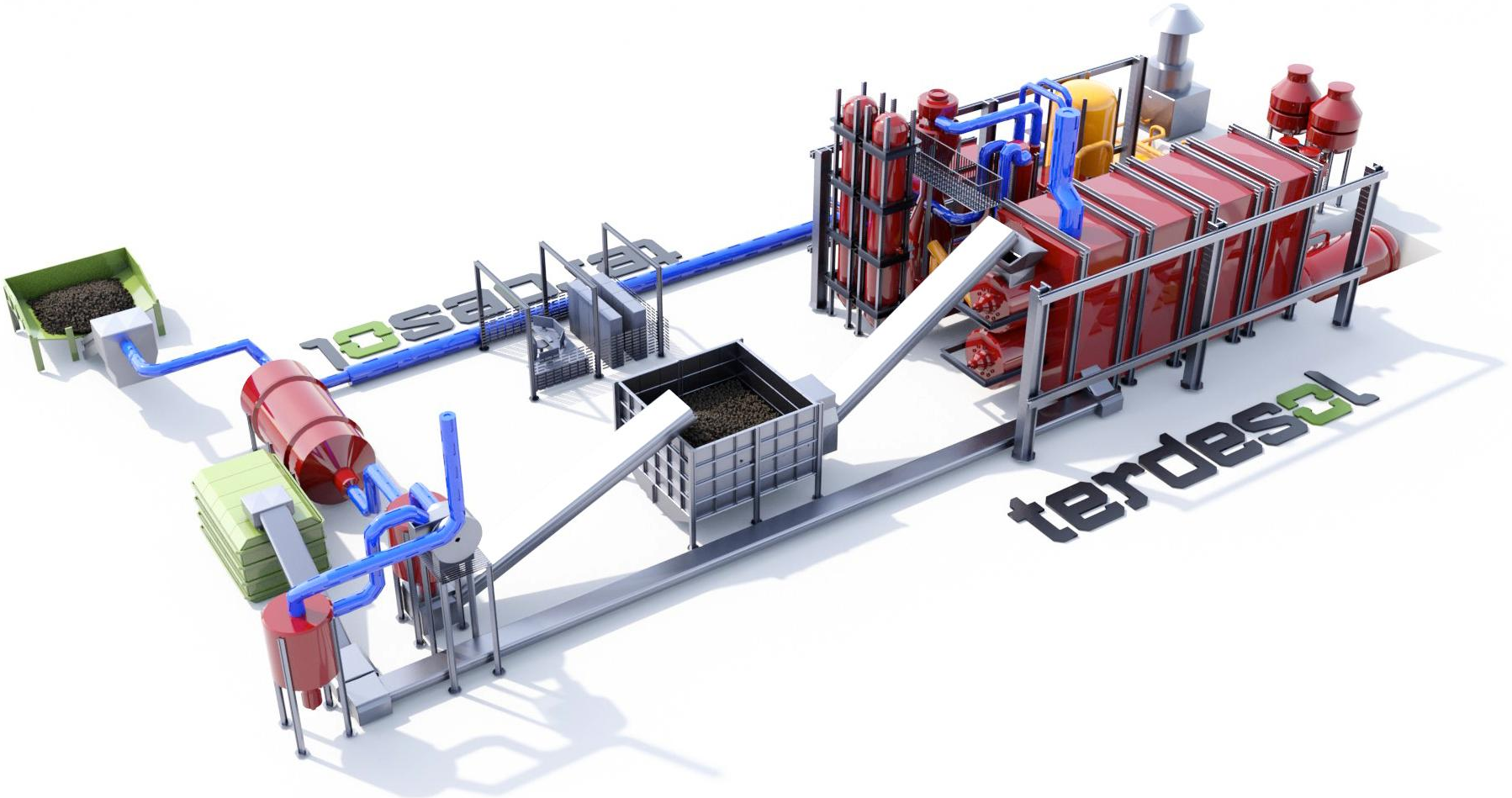
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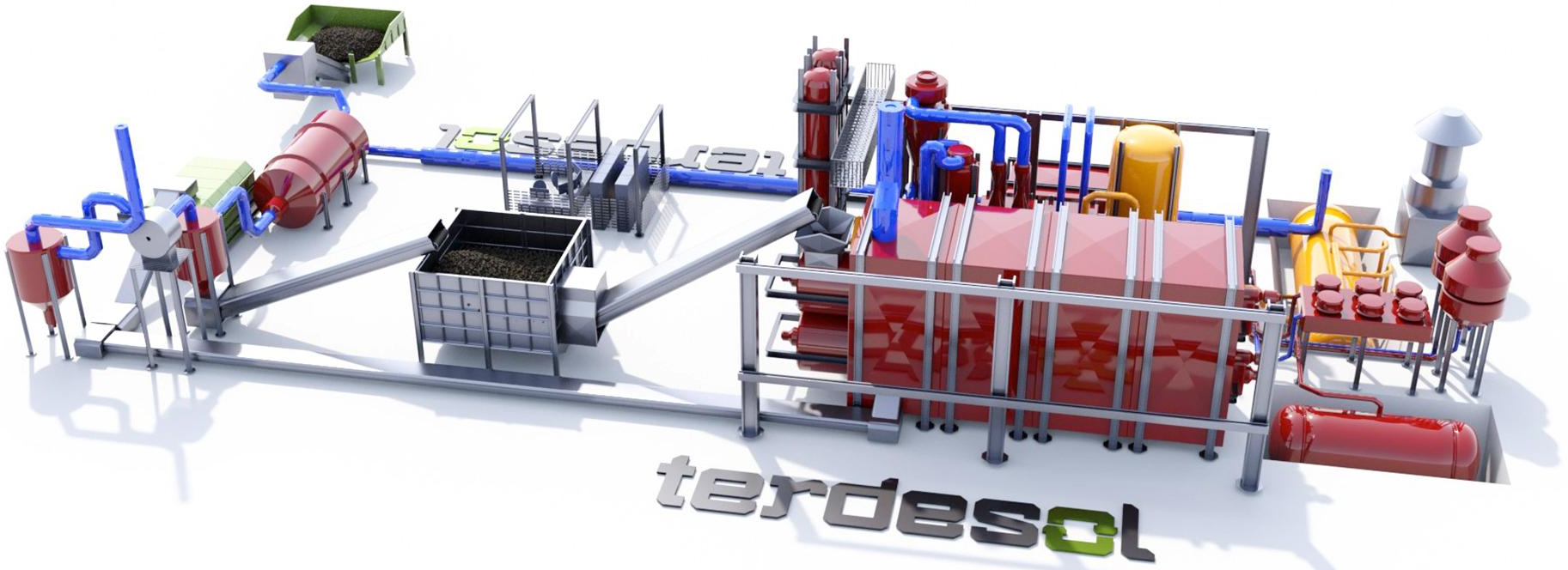
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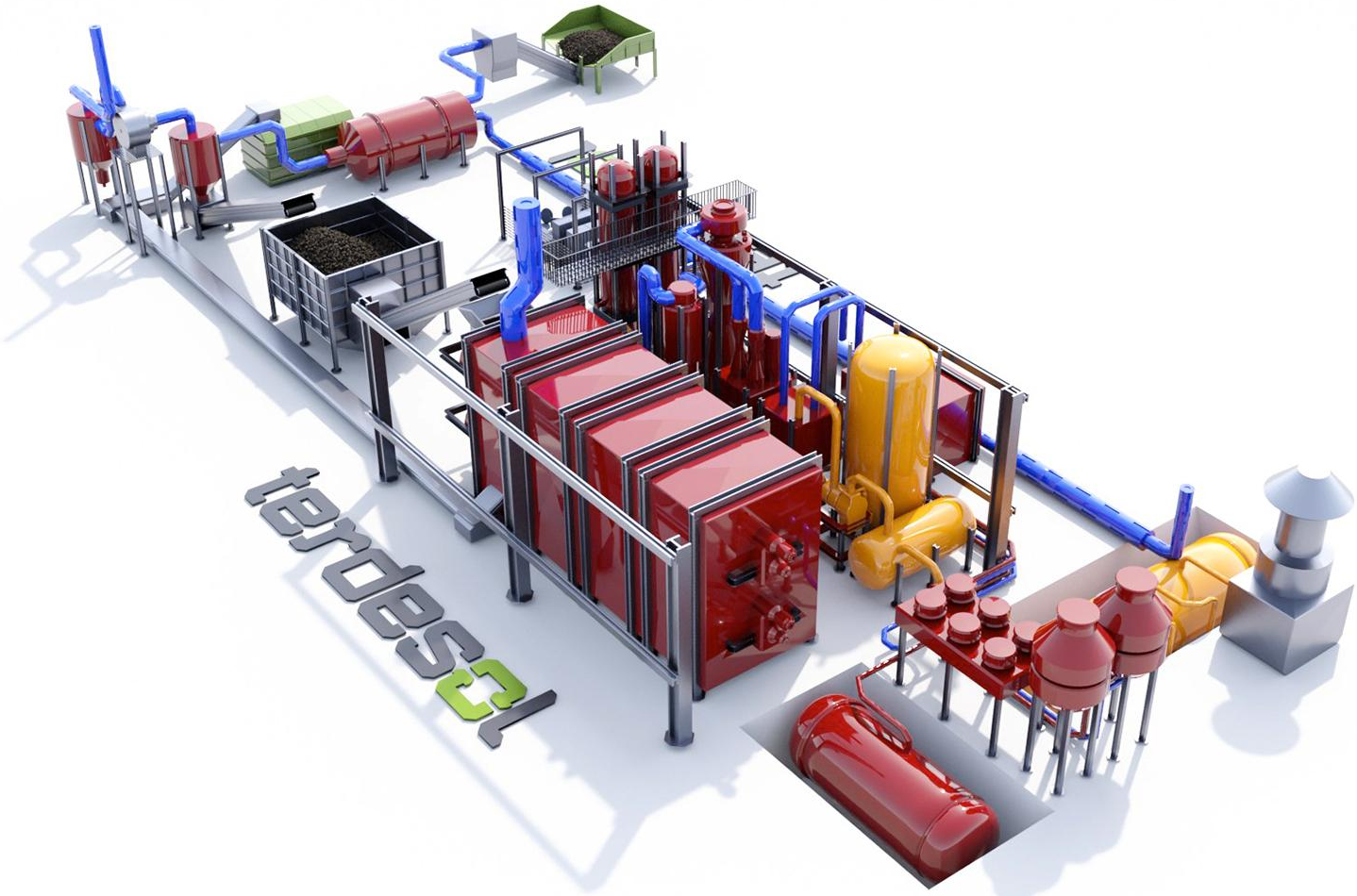
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terdesol
is a sustainable non-intrusive solution
which helps to maintain
a clean, safe and healthy
environment

Carbon neutrality

With Terdesol,
we can achieve
zero carbon dioxide emissions

Unlike incinerators:

high construction costs

low energy efficiency
only 30-35% of the burned waste is converted to electricity

- formation of toxic ash, classified as hazardous waste (has to be disposed of separately)
- emission of gaseous and particulate pollutants
- at a temperature of 1200 °C, waste melts and its usability for the recovery of valuable raw materials is lost

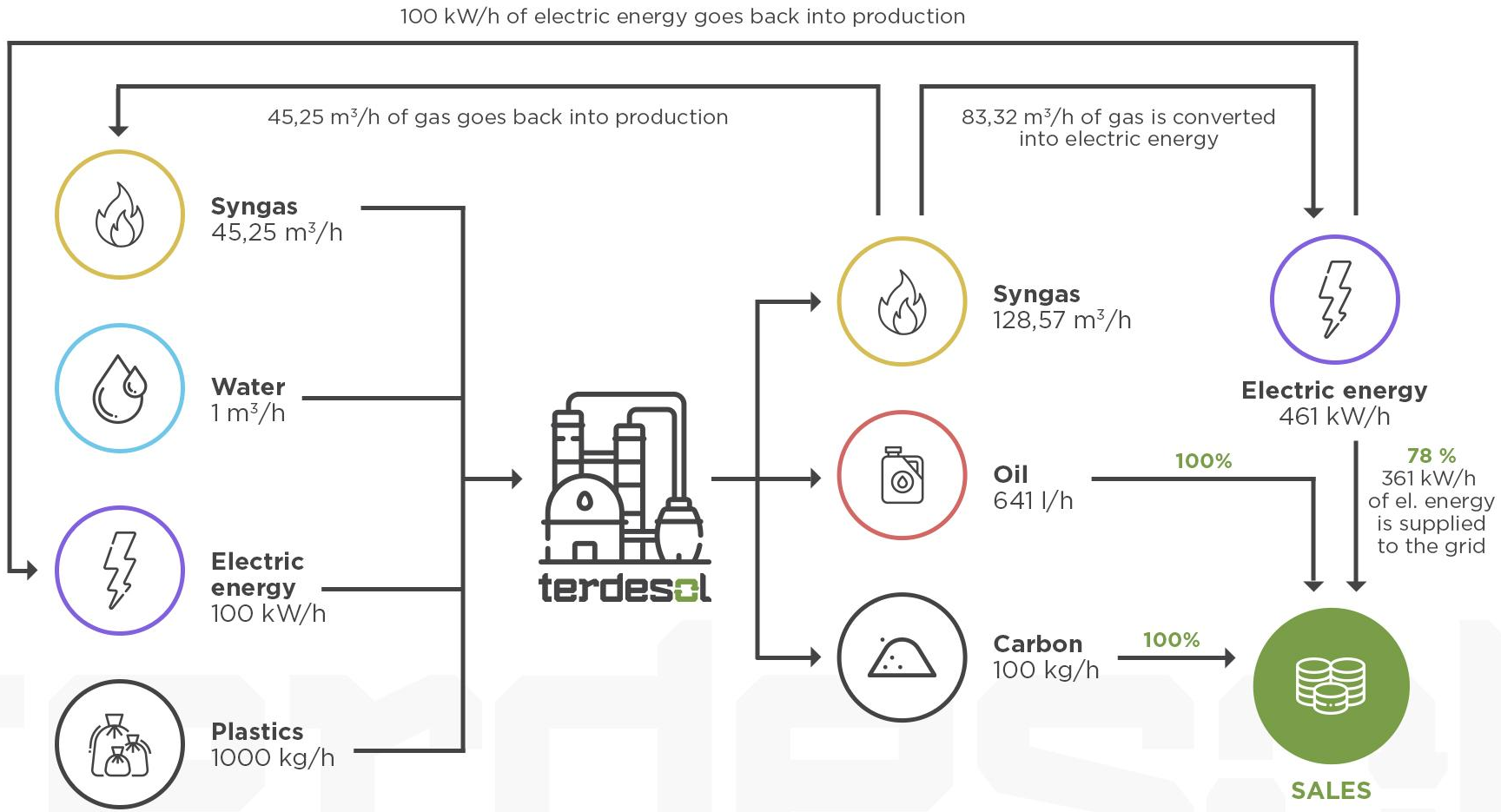
A Terdesol plant is fully automatic
and 100% energy self-sufficient

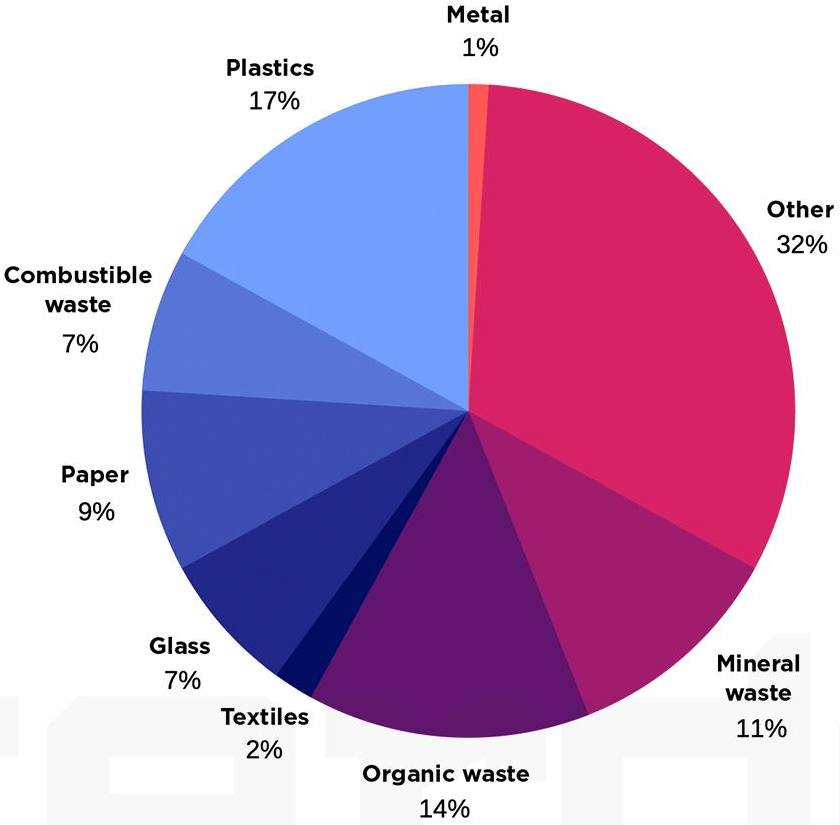
Terdesol runs in island mode.
It produces enough electricity
to sustain itself.

It supplies the remaining
electricity back to the grid.
It's green energy.

How does it all work in practice?

For example,
with 1000 kg plastic per hour...

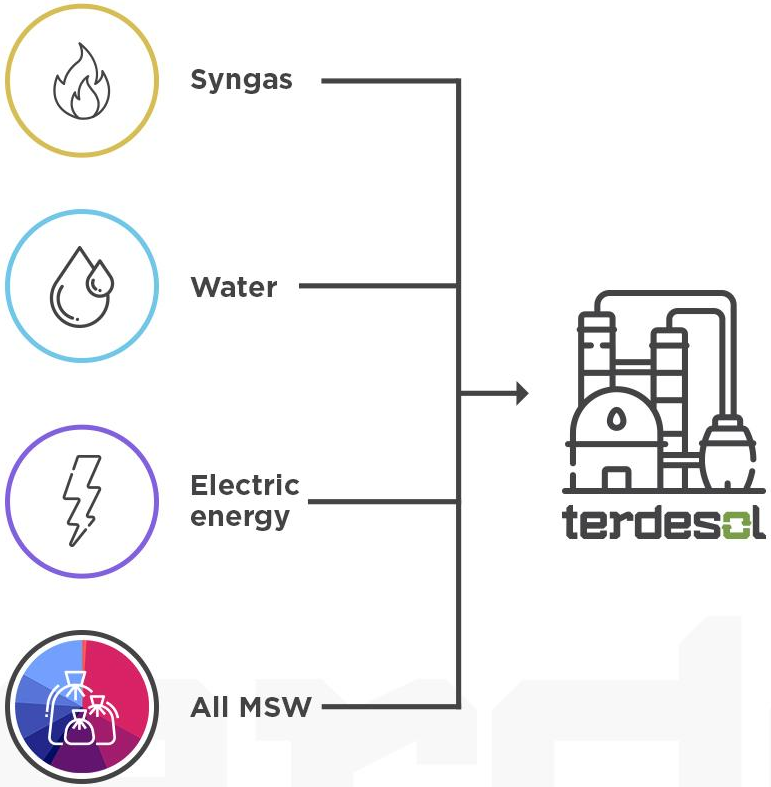

100 kW/h of electric energy goes back into production
45,25 m³/h of gas goes back into production
83,32 m³/h of gas is converted into electric energy
Syngas
45,25 m³/h
Water
1 m³/h
Electric energy
100 kW/h
Plastics
1000 kg/h
terdesol
Syngas
128,57 m³/h
Oil
641 l/h
Carbon
100 kg/h
Electric energy
461 kW/h
100%
78 %
361 kW/h
of el. energy
is supplied
to the grid
100%
SALES



The composition of municipal solid waste (MSW)* in the Czech Republic (EU member state)

* indicative average content

How does Terdesol handle all of this communal waste? →

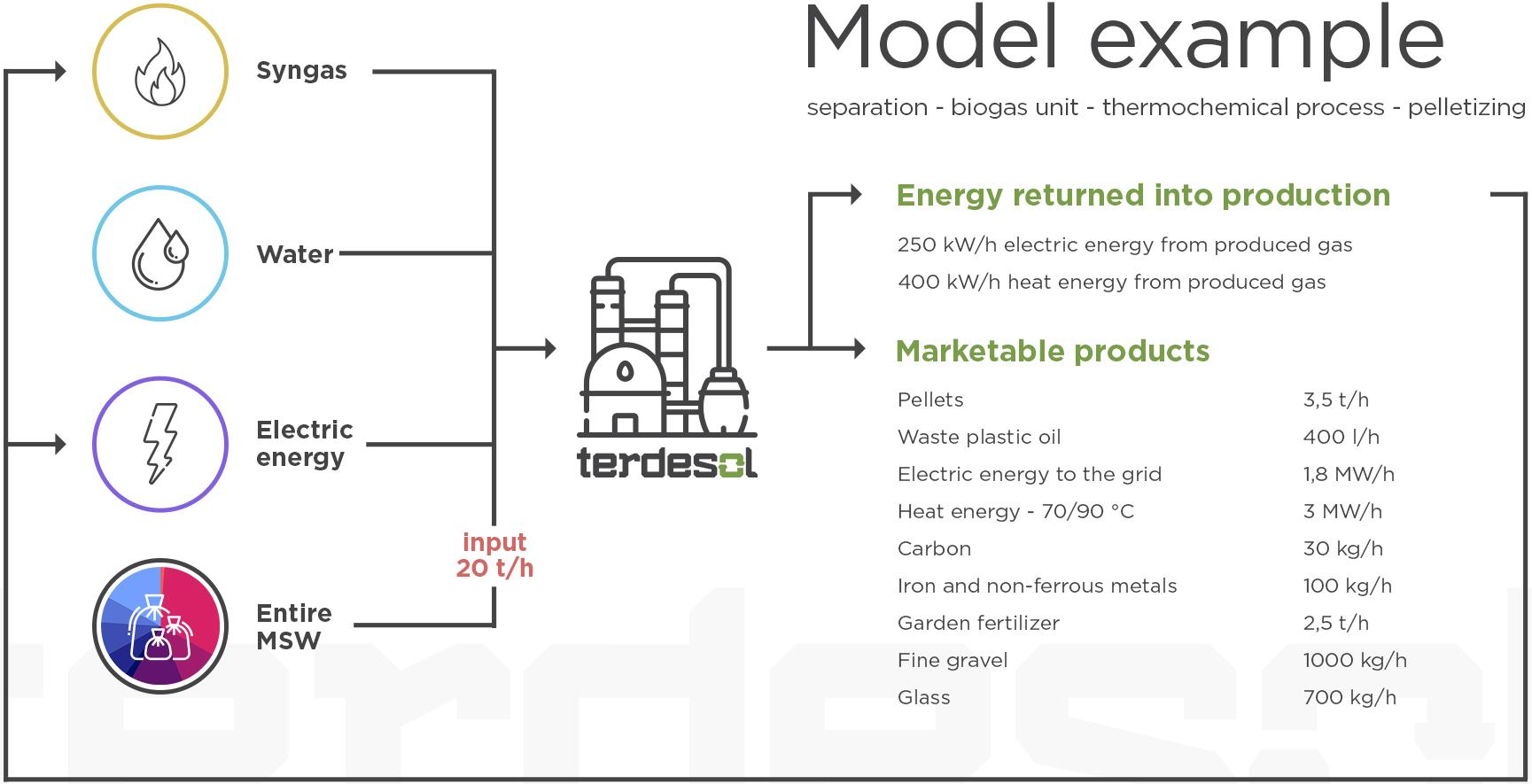


Terdesol can be **flexibly adjusted** to both the economic and energy needs of the municipality

A supply of **20 tons MSW per hour** can be processed according to the following model →

Model example

separation - biogas unit - thermochemical process - pelletizing



Energy returned into production

250 kW/h electric energy from produced gas

400 kW/h heat energy from produced gas

Marketable products

Pellets	3,5 t/h
Waste plastic oil	400 l/h
Electric energy to the grid	1,8 MW/h
Heat energy - 70/90 °C	3 MW/h
Carbon	30 kg/h
Iron and non-ferrous metals	100 kg/h
Garden fertilizer	2,5 t/h
Fine gravel	1000 kg/h
Glass	700 kg/h

Something to think about...


Waste
management
starts at home...
we make
a responsible effort
to recycle...
and to separate
garbage like
we should...

But in reality,
there's just no guarantee
that it won't end up...


...all in one place!

Terdesol handles
all waste efficiently
to create a cleaner tomorrow...

With our patented technology, waste is automatically sorted and processed

Terdesol complements every existing waste management system

- it sorts and processes insufficiently separated waste
- it processes municipal waste in any condition, shape or form

Did you know that only 30% of yellow container content is actually recycled?

Most collected plastic waste is non-recyclable and is disposed in a way that's harmful to the environment. This places an additional burden on our planet, and is a loss of valuable raw materials.

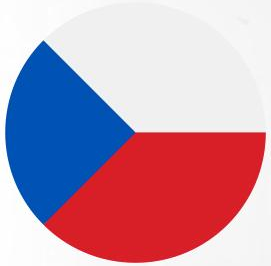
Terdesol does it differently.
We take on any kind of waste and leave nothing behind.


How about existing landfills?

Terdesol can also help eliminate landfills

By mixing waste from any open landfill with fresh waste (optimizing its energy value), the landfill can be gradually eliminated

100% CZECH KNOW-HOW & EUROPEAN TECHNOLOGY



Our technology was developed in cooperation with the Academy of Sciences in the Czech Republic and the University of Pardubice

We have been involved in solving waste management problems in many countries around the world

Leading members of our team are official advisors to the Czech National Interparliamentary Group for Ecological Waste Management

Part of the initial cost

for the purchase of Terdesol technology is provided by European Structural and Investment Funds (ESIF)

EU objective:
eliminate landfills by 2030


terdesol
AN UNEQUALLED
WASTE DISPOSAL SOLUTION
Participate fully and profitably
in the circular economy

THE ULTIMATE
RECYCLING SOLUTION

terdesol