Zero Wast - Green Energy Park Sisak, Croatia

Through Emission-Free Waste Utilization

Utilization of recyclable and non-recyclable waste to Energy / Fuel / District Heating / Building Materials

482,0 Mio. EUR Investment

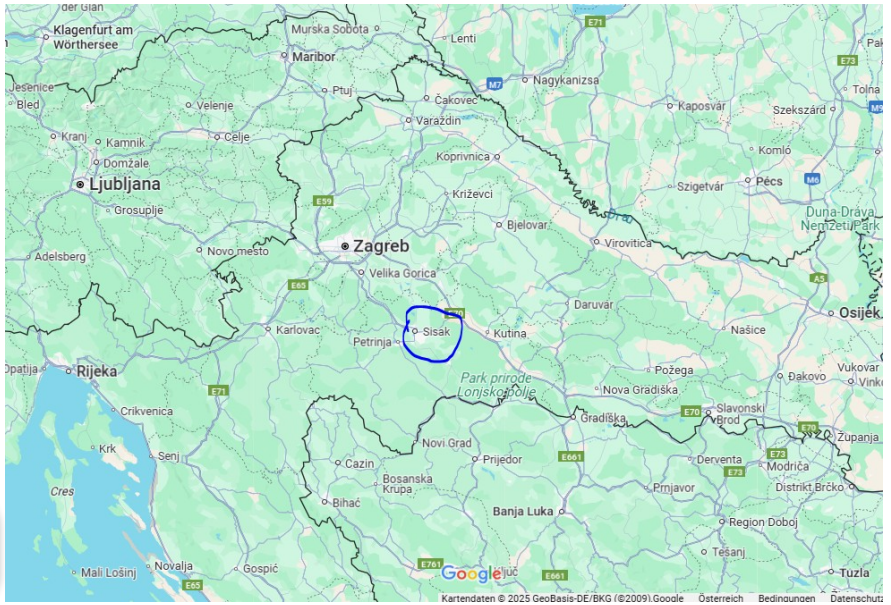
Construction Land with permissions – Sisak, Croatia

Industrial waste treatment area – Sisak

Transitioning from polluting industries:
Sisak's reliance on heavy industries creates challenges related to greenhouse gas emissions and environmental impact. Diversification efforts will bring sustainable businesses and industries to reduce reliance on these sectors.

Industrial Heritage:
Sisak's history as an industrial center is positioning itself as a regional hub for the new industry, leveraging its industrial heritage and developing a strong focus on new technology. The city aims to revitalize its image and economy by capitalizing on related industries.

Strategic Location:
Sisak's location on the Sava and Kupa rivers offers opportunities for trade and transportation by rail, highways and river in the center of Europe. 80000 m2 waste treatment permitted land available



Integration into the district heating and energy network would be possible through additional expansion**! Costs are to be determined!**

Zero Wast - Green Energy Industrial Park Sisak

CCC
(Cold Catalytic Conversion)

Input

- Household waste

Output

- Sythetic Fuels
- Bitumen

TBD
(ThermoBaric Destruction)

Input

- Wet Household waste
- Manure
- Sludge
- Organic Waste
- Hazardous Waste

Output

- Methan (High-calorific)
- Fertilizer
- Construction Sand

! Phospates are extracted and PFAS are destroyed in process

PCC
(Pyrotlytic Catalytic Cracking)

Input

- Plastic garbage
- Household waste
- Organic materials
- Medical waste

Output

- Activated carbon
- Energy in the form of electricity
- Crack Oil

! PFAS are destroyed in the process!

STE
(Sludge To Energy)

Input

- Sewage sludge

Output

- High-calorific fuel coal

RPP
(Recycled Polypropylen)

Input

- Big Packs
- IBC Container
- Wind turbine blades / GFK

Output

- Recyceld PP Granulate
- Recyceld GFK Granulate

The industrial park is supplied with 400 innovative decentralized wind turbines, which start up at speeds of 8 km/h.
Output approx. 2,5 MWh of electricity

Negative CO_2 Foodprint
Creation of CO2 certificates

Total investment with shared buildings, land, service and equipment
466 Mio. EUR

CCC - Cold Catalytic Conversion

CCC is a low-temperature catalytic process to convert carbon-containing waste into high-quality raw materials – especially oil and carbon residues

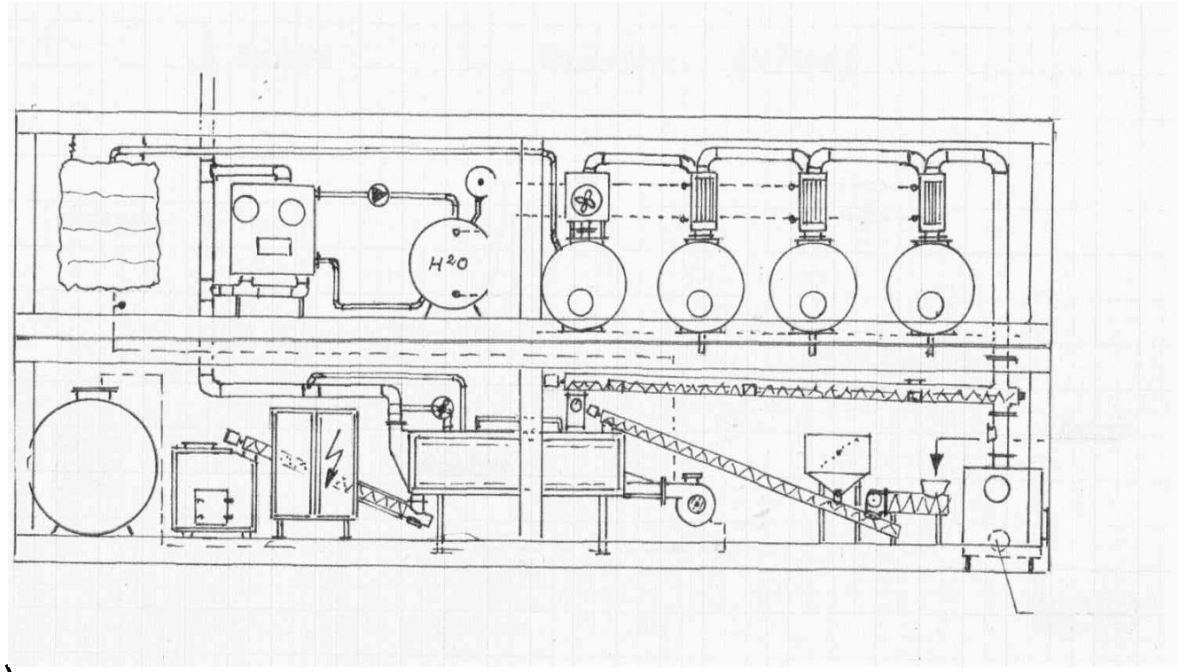
Process temperature: 250-350°C (no pyrolysis process)

No oxygen and no hydrogen needed

Modularly expandable
per module 350kg input/h

Usable input materials
Mixed plastics, used plastics (also contaminated)
Household waste, biomass, sewage sludge
Textiles, rubber, composites

Output Products
Oil (up to 600 kg/ton of plastic)
Solids (coke-like residue, CO_2-negative recovery)



CCC
(Cold Catalytic Conversion)

Input

- Synthetics
- Household waste
- Biomass
- Problematic substances (which contain PVC)

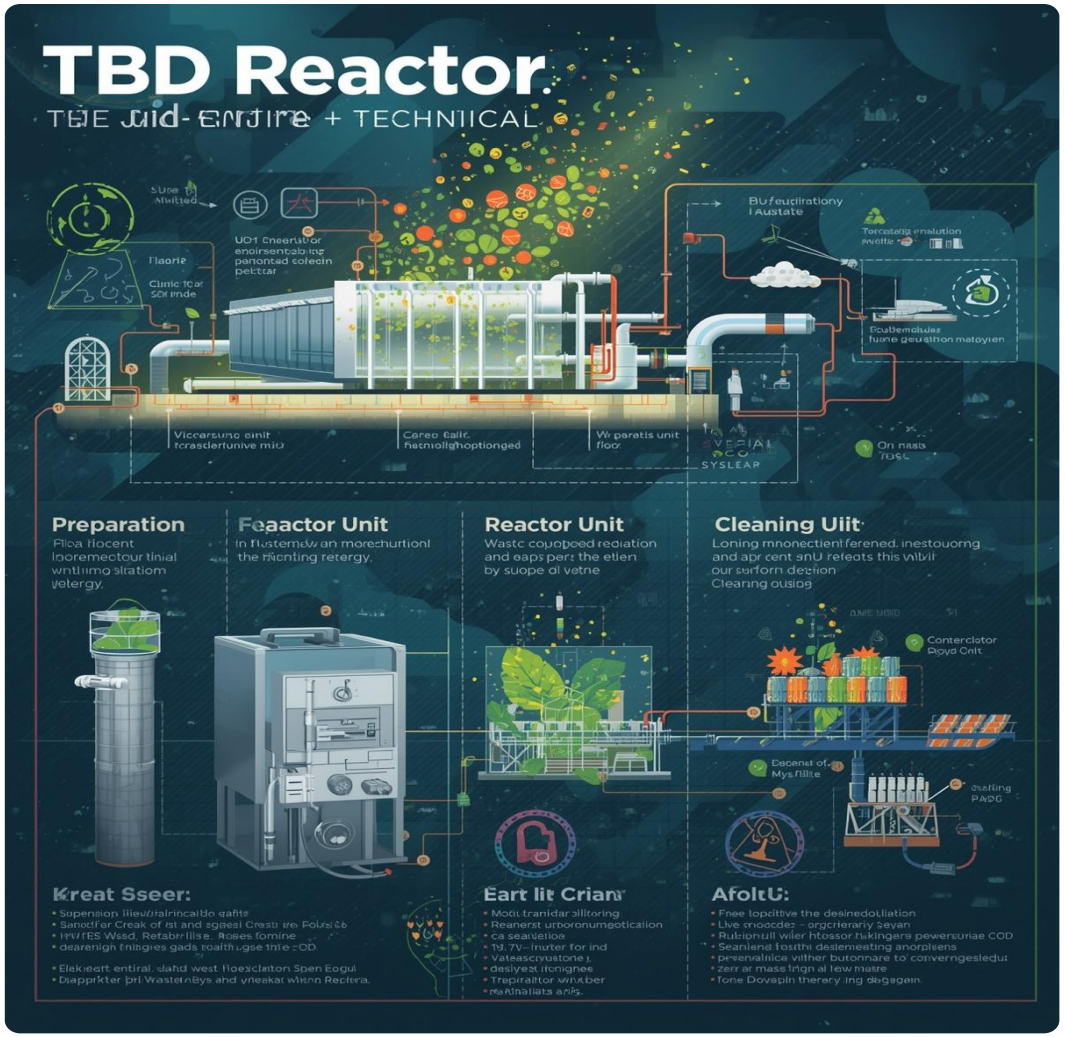
Output

- Synth. Crude oill
- Industrial oils
- Synthet. Fuels
- Electricity (in combination with CHP)

Investment for 2 modules - 15 Mio. EUR

TBD - ThermoBaric Destruction

In the working area of the TBD reactor, high pressure (250 atmospheres) and a temperature of 380°C are created, as a result of which the working fluid - water, passes into a state of supercritical fluid and becomes an almost ideal solvent. Under its influence, organic substances contained in the waste disintegrate into compounds of hydrogen and carbon - these are gases: methane, ethane, propane and hydrogen remaining without a compound. The entire process of waste gasification takes from 1 to 30 seconds. This time is enough to process 100% of the organic compounds in the original mixture into clean water and flammable gas. This technology for obtaining gas from waste is at least 336 times more efficient than existing ones



TBD
(ThermoBaric Destruction)

Input

- Wet Household waste
- Biomass
- Sludge
- Manure
- Hazardous Waste

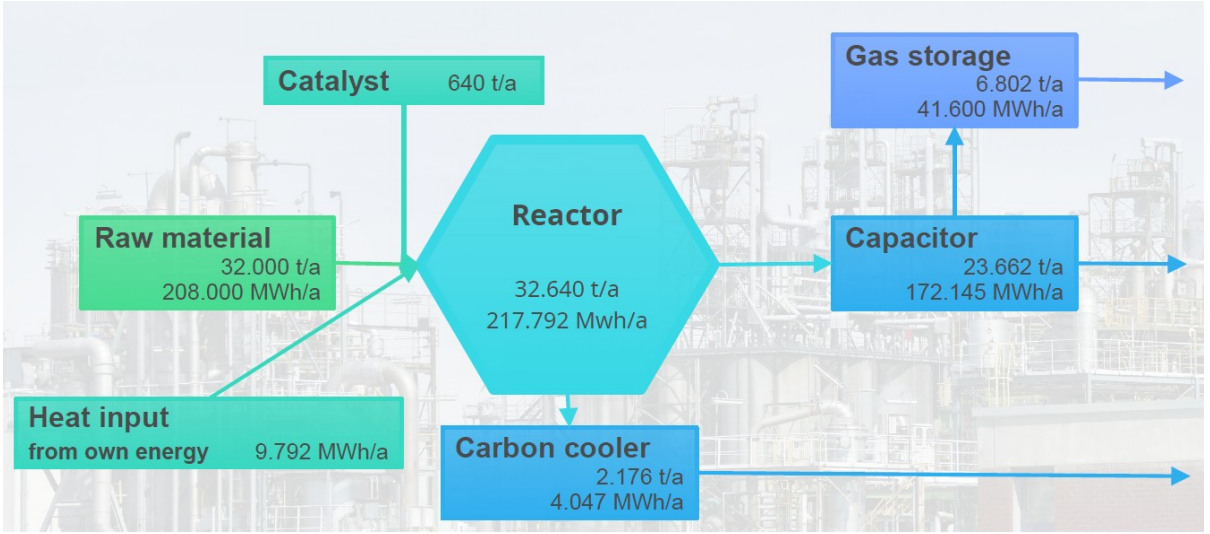
Output

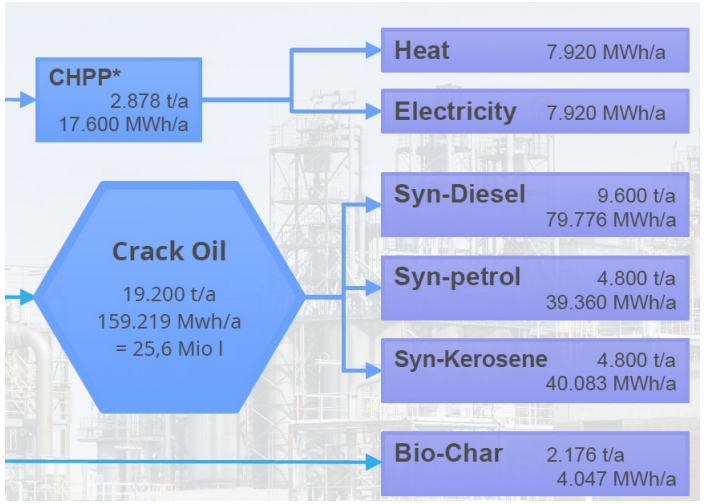
- Mineral Fertilzer
- Methan Gas
- Construction Sand

Investment for 1 modules - 25 Mio. EUR

PCC - Pyrolytic Catalytic Cracking

The PCC (Pyrolytic Catalytic Cracking) technology is a breakthrough in waste management, converting plastic and other hydrocarbon waste into valuable resources like gas, oil, and solid carbon. In 10-15 minutes, a technical facility creates, through thermal, catalytic cracking, crude oil, for which nature would need about 1 million years. Compared to PCC, standard pyrolysis is an outdated and inefficient approach to processing waste plastics and other hydrocarbons. It is an energy-intensive, inflexible method that delivers inferior results compared to modern alternatives such as Pyrolytic Catalytic Cracking.In the thermal process, the bound PFAS (per- and polyfluorinated alkyl compounds) can no longer be released into the environment.





PCC
(Pyrolytic Catalytic Cracking)

Input

- Plastic garbage
- Household waste
- Organic materials
- Medical waste

Output

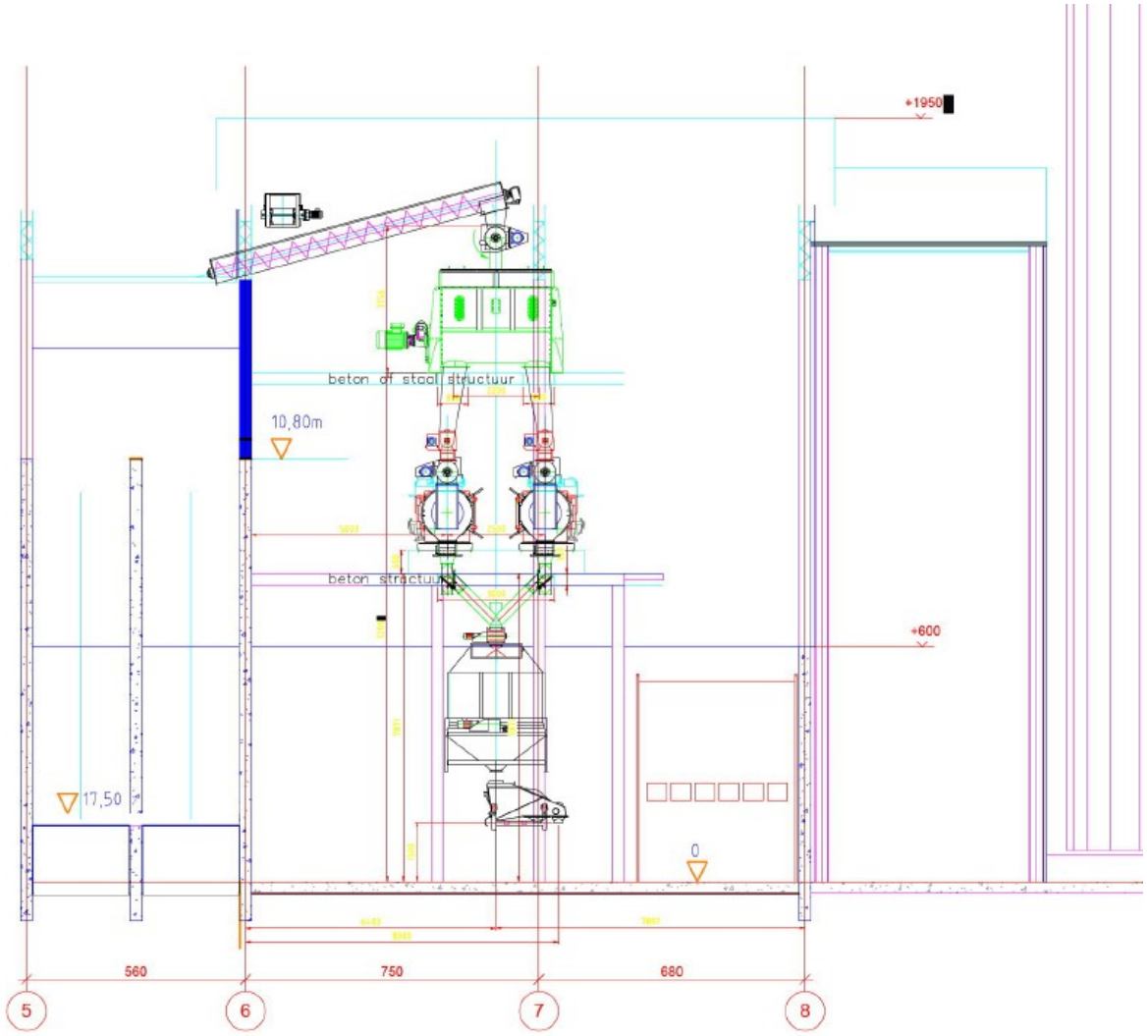
- Activated carbon
- Energy in the form of electricity
- Crack Oil

! PFAS are destroyed in the process!

Investment for 36 reactors– 302,5 Mio. EUR

STE – Sludge To Energy

STE is a sewage sludge treatment plant and recycling system.
The sewage sludge is used to produce high-calorific coal, which can be added to the CCC or TCC process.



STE
(Sludge To Energy)

Input

- Sewage sludge

Output

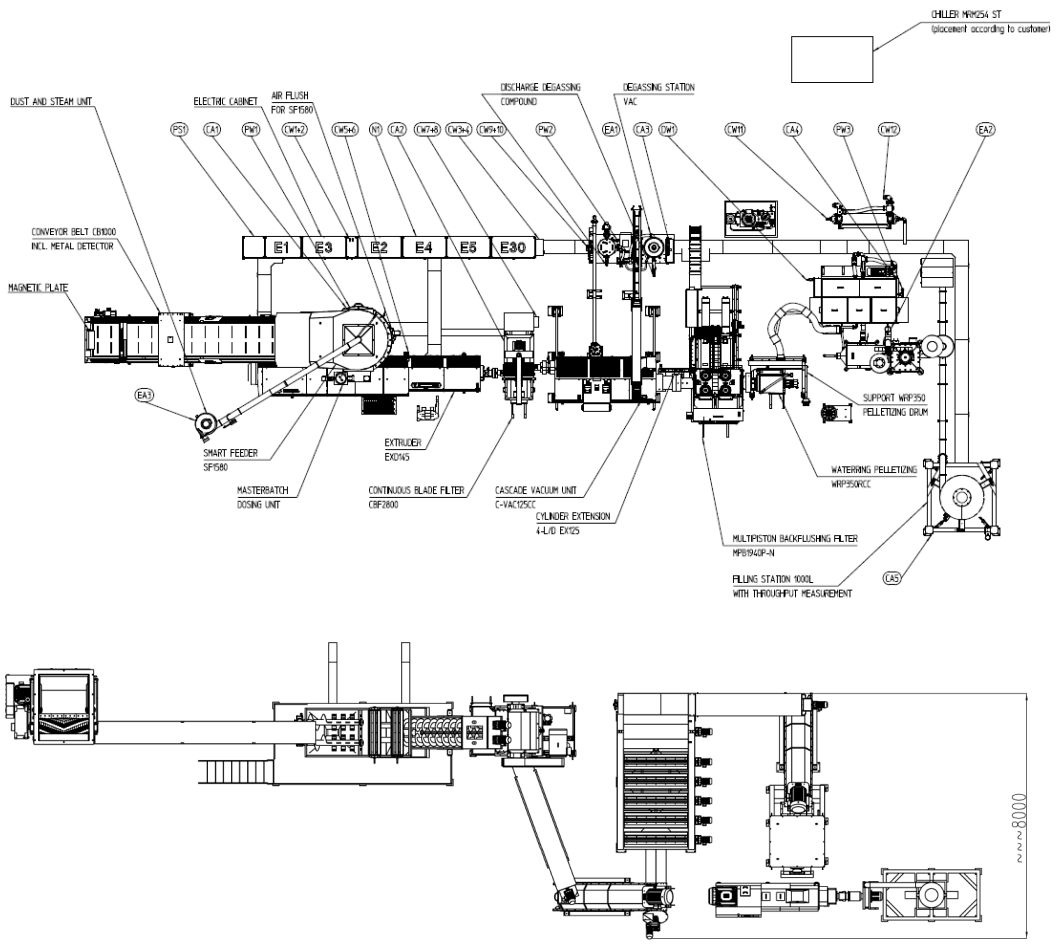
- high-calorific coal

Investment – 14,2 Mio. EUR

RPP - Extrusion line for PP Granule

RPP is an extrusion line for the production of high-quality PP granules from e.g. big packs, IBC containers.

This system can also be configured to produce high-quality GRP granules from wind turbine blades, which can be made available to industry as a building material.



RPP
(Extrusion line)

Input

- Big Packs
- IBC Containers
- Wind turbine blades / GRP

Output

- Recyceltes PP Granule
- Recyceltes GFK Granule

Investment for 2 lines – 9,6 Mio. EUR

Winddriver- decentralised mini wind turbines

Winddriver – highly efficient decentralised Wind turbines.

Winddriver systems are designed as small columns with combined solar technology and work with maximum efficiency for 24 hours at a wind speed of 8 km/h or more thanks to a new type of vertical turbine. The systems can also serve as storage facilities. Winddriver can be easily set up and installed anywhere. The plants are to supply the technology park with the necessary electricity

Investment – 14 Mio. EUR

CO_2 – Certificates

Due to the negative footprint of the industrial park, CO2 certificates can be issued.

The sale of the certificates generates considerable income.
This revenue can in turn be used to finance climate action, research and development in the field of renewable energy or to support companies in switching to lower-emission technologies.

Trading makes it possible to effectively control the quantities of emissions.
By adjusting the number of available certificates (cap).

The revenues from certificate trading can be invested in programs that promote innovation in the field of green technologies.

This accelerates the transition to a low-carbon economy and strengthens the competitiveness of companies that rely on sustainable solutions.

Green Energy Industrial park Sisak

Historically, the Sisak region has always been a carrier of modern industry that have been able to establish themselves sustainably in the world.

With the pilot projects
"Green Energy Industrial Park Sisak" is a milestone that is unique and sets new global standards in the field of sustainable recycling.

In doing so, Sisak would also define a new standard in the field of recycling.

It would also be conceivable to provide space in the industrial park for research and development in the field of recycling to be able to attract further innovations and investors.

As state relevant project the park holding will be entitled to a 10-years tax freedom