

WASTE REFINERY®

The sustainable way to valorize municipal waste

An innovative project for the valorisation of domestic and comparable forms of waste.

The fresh MSW is sent through a wet separation process, the WASTE REFINERY, resulting in:

- The recycling of materials which are immediately clean and can be reintroduced into the circuit.
- The creation of a fuel that can be produced at any desired calorific level.
- The saving of energy during the treatment process.

In 2013 / 2014, the procedure was set up in a laboratory scale in the Karvina region in the Czech Republic, in cooperation with Depos, an intercommunal association which currently landfills the region's waste. In 2018, the separation process was set up in an industrial scale (30 tonnes of fresh MSW), including a combustion test at the Karvina city heating installations and under external evaluation of the Technical University of Ostrava. The first results are so positive that the initiators are convinced of its applicability on every scale and everywhere on earth **as the realistic step towards a circular economy**.

The choice of a WET treatment is essential as well as original, and it is advantageous in that:

- The recycled resources are clean, and have a higher market value and give less leaching.
- There is a low energy need: no energy is required for the evaporation of the water in the material (up to 1/3 of its mass), nor for the heating of inert materials (up to 1/3 of the mass).
- A maximum amount of non-oxidised metals can be recycled, so that the leaching of heavy metals is limited.
- The capacity of the installation can be adjusted to any desired quantity.

The main advantage for governments is that:

- Investment in classic incinerators or landfills is no longer required.
- The installation can also be applied to **landfill mining** (cleaning up existing landfills by recuperation of the materials inside).

For proprietors of existing incinerators and energy installations, the main advantage is that:

- The output and capacity of the ovens can be noticeably increased.
- A new efficient fuel is available for co-combustion.

The next step in the development is the creation of syngas and hydrogen out of the waste. This will be developed in a partnership between the initiators (IPAS and transit_LAB, Belgium) and GIG / Central Mining Institute Poland.

The investment and working costs are extremely low in comparison to the construction of incinerators.

Links with more information:

www.ipas.world

www.transit-lab.be

