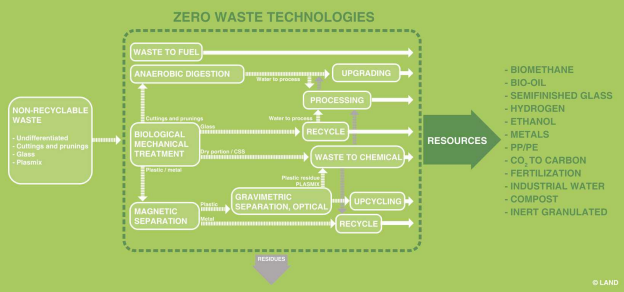
ASSORISORSE

CIRCULAR ECONOMY

WASTE: THE ENERGY OF THE THIRD MILLENNIUM



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CIRCULAR ECONOMY: ZERO WASTE INDUSTRIAL SCHEME

The Zero Waste Industrial Scheme is a project that combines various types of technologies used to treat municipal solid waste, makes use of all recyclable components and converts non-recyclable fractions into marketable resources (biomethane, hydrogen, chemicals and others).

Assorisorse's feasibility analysis foresees different dimensions to make the project suitable for both a metropolis and a smaller urban center. The larger size can handle over 500,000 tonnes of waste per year. It manages all waste and prevents combustion, guaranteeing a conversion rate of at least 98%.

The technologies used induce a considerable reduction in CO_2 emissions, and the CO_2 produced is available pure and ready for agriculture use or sequestration. The reduction in CO_2 is doubled when combined with electrolysis.

The industrial scheme ensures high profitability. The estimated total cost of investment is around €660 million, guaranteeing gross earnings of around €170 million, with an IRR approaching 20% and a payback period of about 5 years. A smaller size lengthens the payback time, and in some cases doubles it.

The Zero Waste Industrial Scheme can be implemented on existing industrial sites, guaranteeing a future for industrial areas that are no longer profitable and allowing full use of existing operating skills. A technological hub with start-up and training activities can be included.

All circular economy principles are achieved in the model, providing an innovative technological solution for municipal solid waste that cannot usually be energetically recovered without significant emissions residues and ashes. A highly promising return on investment and a reduction in the environmental impact of waste treatment are ensured.

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BRINGING TOGETHER IN A SINGLE PROJECT, THE SKILLS OF THE ASSORISORSE SUPPLY CHAIN

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CIRCULAR ECONOMY: ZERO WASTE FOR THE ENVIRONMENT

Strengths of the project:

- treating waste, recovering and converting all fractions into: biomethane, hydrogen, ethanol, bio-oil, PP/PE, granulated, glass, metals, CO_2, compost, and water;
- ensuring at least 98% recycling rate, 40% is converted into marketable products;
- reconverting existing industrial sites to minimize land consumption: abandoned industrial areas are 3% of Italy's territory (an area of about 9,000 sq. km);
- producing carbon-neutral renewable energy: organic waste is converted into biomethane or in bio-oil;
- allowing CO_2 capture and sequestration through liquefaction technology, with an open-cycle nitrogen plant;
- growing new professional figures and connecting the world of waste with academia and research.

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