Supercritical water co-oxidation (SCWcO) of urban sewage sludge and wastes

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Project cofinanced by European Union through LIFE programme LIFE+12 ENV/ES/000477

Partners: ainia centro tecnológico · IMECAL · IVEM · Scfi · urbaser

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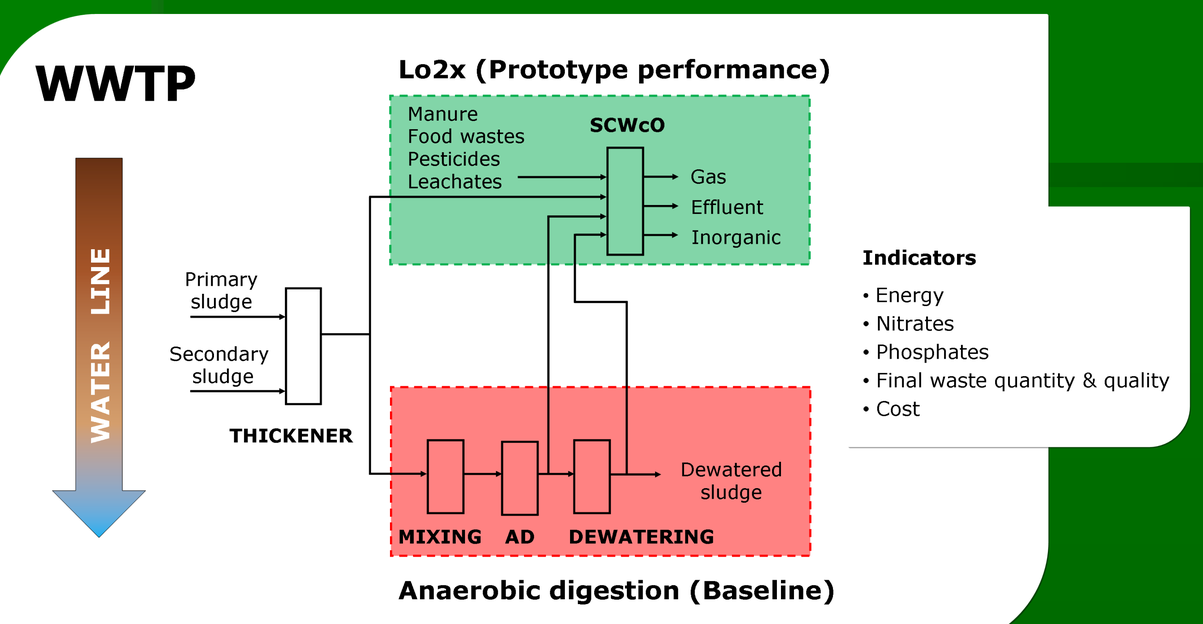
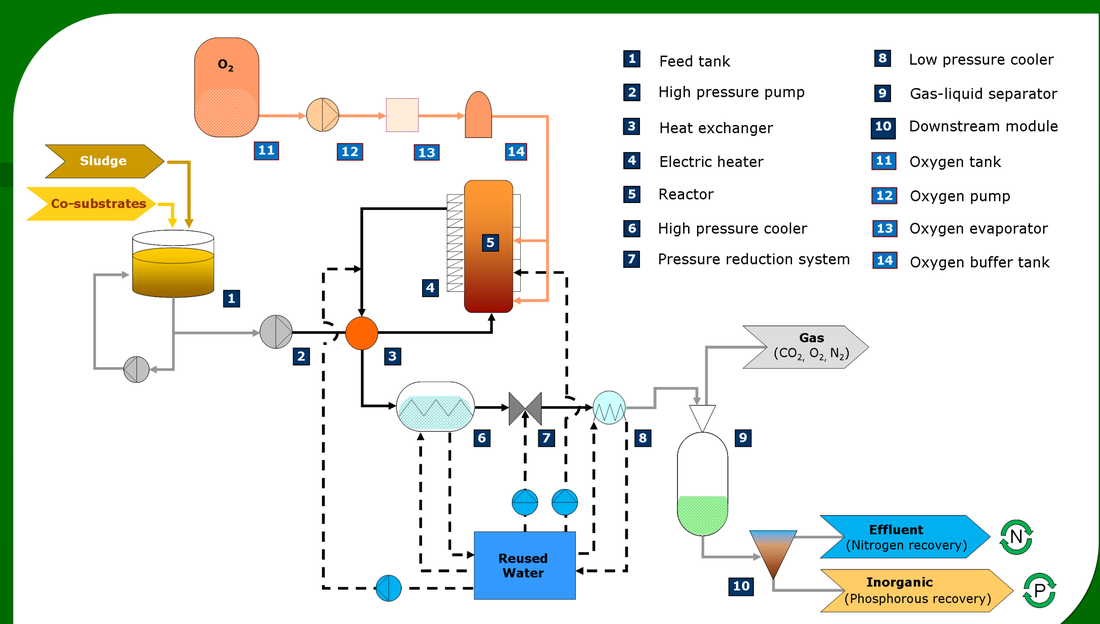
THE PROJECT

The Lo2x project aims to demonstrate the environmental and socio-economic benefits of a **synergic co-treatment of sewage sludge and wastes** (raw or digested manure, high load food processing wastes, pesticides, leachates and others) with energy and phosphorus recovery through **supercritical water co-oxidation (SCWcO)**.

SCWcO

The technology is based on the particular properties of **water under temperature and pressure conditions beyond its critical point (T>374ºC and p>211bar)** and the presence of **oxygen.** SCWcO may oxidize completely any organic compound to simple molecules such as water (H_2O), and carbon dioxide (CO_2).





OBJETIVES

1. **Design and construction of a prototype.** Treatment capacity of demonstration plant: **1 tonne of dry matter per day.**

2. **Determination of operating conditions and mix ratios for best process yield and energy balance.** In line the achievement of climate neutral wastewater systems and an energy improvement for 2020.

3. **Determination of operating conditions to optimise P recovery from wastes.** Contributing to the objectives of the Resource Efficiency Roadmap (Wastewater Treatment Plants WWTP as resource factories).

4. **Determination of reduction in the final amount of waste generated in a WWTP and better quality for safe disposal.** In line objectives of Waste Directive.

5. **Determination of economic balance linking environment, innovation & socioeconomic growth.**

EXPECTIVE RESULTS

- **100% elimination of pesticides and ammonia.**
- **100% P recovery.**
- **Positive energy balance (net production).**
- **90% reduction of sewage sludge leaving the WWTP in relation to current production.**
- **>10% reduction in sludge cost treatment.**