New concept for energy self-sustainable wastewater treatment process and biosolids management

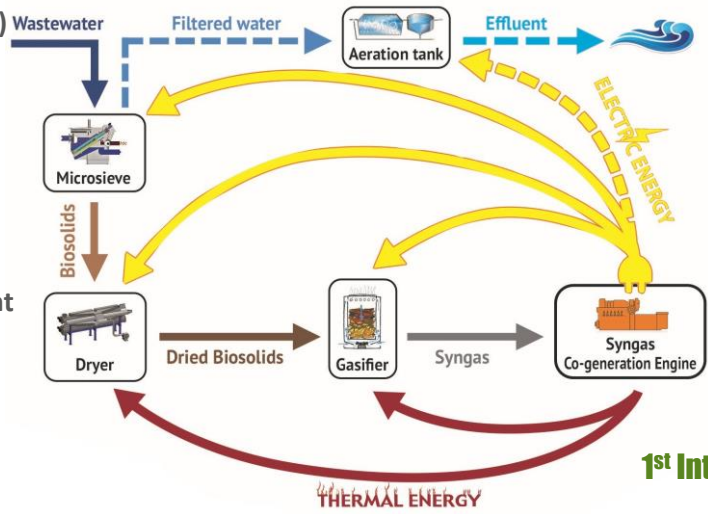
LIFE B2E4SustWWTP **LIFE16 ENV/GR/000298** **www.biosolids2energy.eu**

OBJECTIVES

- Upgrade of overloaded (and thus, under-performing) activated sludge Wastewater Treatment Plants (WWTPs)
- Protection of aquatic environment against pollution caused by WWTPs effluent
- Environmental management of biosolids
- Energy production from biosolids

PROJECT OUTLINE

- *Microsieving* → Removal of primary biosolids upfront of the aeration tank using a rotating belt filter
- *Drying* → Moisture removal from biosolids
- *Gasification* → Syngas production
- *Syngas combustion* → Production of thermal and electric energy



Flow diagram of the process

FACTS

- Municipal wastewater contains 3-6 times the energy required for treatment
- Biosolids produced through microsieving contain low moisture and high energy
- Gasification has higher energy yield, compared to anaerobic digestion

PROJECT FACTS

- Wastewater capacity: ~ 5,000 m^3/d
- Biosolids management: ~ ½ ton/d
- Biosolids Higher Heating Value: ~ 21.5 MJ/kg
- Syngas production: 1,800-2,400 Nm^3/d
- Target electric energy production: 30-50 kW

1st International Environmental Engineering Conference

7th -10th September 2022, Rethymno, Crete, Greece

Info: www.biosolids2energy.eu/conference.html

Site visit request:
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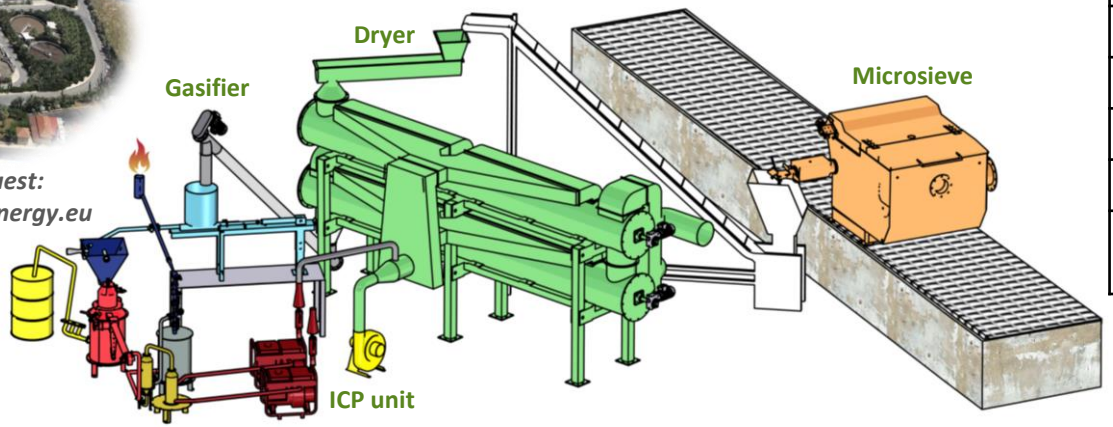

INFORMATION	
Total budget	1,993,855 €
EC co-funding	60% (1,162,004 €)
Project duration	01/09/2017 – 31/12/2022
Coordinating beneficiary	TUC (GR)
Associated beneficiaries	CETENMA (ES), DEVISE (GR), DEYAR (GR), ENGINNOV (UK)

Co-funding

With the contribution of the LIFE programme of the European Union and the Green Fund

Coordinator

Technical University of Crete

Design of Environmental Processes Lab

Associated beneficiaries

DEVISE ENGINEERING S.A.

CETENMA Centro Tecnológico de la Energía y del Medio Ambiente

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