Case study factsheet

Karmiel and Shafdan, Israel

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Project ULTIMATE

KARMIEL: https://goo.gl/maps/uZboLk1RGDR96wdB8; SHAFDAN: https://goo.gl/maps/xWqnwsafmb5RAWMo9 , **Israel**

Description

The Symbiosis in Karmiel and Shafdan interconnects 2 SMEs from the agro-food sector with a public wastewater utility, linking an industrial wastewater treatment plant (WWTP) with a municipal WWTP. The agro-industrial sector includes agriculture, food industry, olive oil mills and water treatment. The symbiosis will enable to protect the current WWTP of Karmiel and Shafdan that are usually exposed to sudden shocks of strong and problematic agro-industrial wastewater (i.e, OMW, Slaughterhouse, winery). Karmiel municipal WWTP faces problems due to shock loads of olive mill wastewater (OMW) during the harvest period and due to illegal discharges from slaughterhouses in the area. No solution has been found yet for an upstream and on-site wastewater pre-treatment which is technically feasible, economically viable and socially acceptable. Thus, when happens, the wastewater is discharged without adequate treatment. Shafdan WWTP of Tel Aviv is Israel's largest WWTP (400000 m^3/d) and collects, treats and reclaims municipal wastewater in this rapidly growing area. Suitable pre-treatment of agro-industrial wastewater at the Shafdan site will enable the continuation of the current nature-based reuse system and supply water for agricultural activity in the Negev desert, even when receiving more agro-industrial wastewater in the future, in addition to paretially reduce the energy demand, decrease the sludge production as well as inccrese the biogas production.

Applied technology

- **Immobilised high rate anaerobic reactor**

Publications and references

- Naves Arnaldos, A., van den Broeke, J., Guleria, T., Bruni, C., Fantone, F., Touloupi, M., Iossifidis, D., Giménez Lorang, A., Sabbah, I., Farah, K., Baransi-Karkaby, K., Pidou, M., Reguer, A., Kleyböcker, A., Jährig, J., Vredenbregt, L., Thisgaard, P., D1.9 Start-up and intermediate results of plant operation from all case studies, Project report, *ULTIMATE,* 2023

Scale

Operational scale of this case study related to the application of tools and technologyies

- Local scale

Challenges

Challenges that are addressed through the application of tools and/or technologies to the case study

- Water Scarcity
- High or increasing irrigation water demand for agriculture
- Need for reuse and recovery schemes for wastewater & sludge

Related tags

AAT | Biogas production | Polyphenols recovery

Contact data

Contact person

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Involved organisations

1. AGROBICS
2. Greener than Green (GTG TECH)
3. Mekorot water company (MEK)
4. The Galilee Society