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ESR2: ANAEROBIC MEMBRANE PROCESS OPTIMISATION FOR THE PRODUCTION OF A P-RICH CONCENTRATE FROM ORGANIC EFFLUENT

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Research goals and focus:

- The aim of ESR2 is to develop, optimise and evaluate process performance of AnMBR coupled with freeze concentration (FC) for the production of a P-rich concentrate from DPW.
- Determine the efficiency and optimal operational parameters for a laboratory scale AnMBR.
- Select the proper membrane properties as well as the optimal operating parameters including trans-membrane flux, crossflow velocity, membrane filtration cycle and membrane cleaning method by biogas sparging frequency.
- Optimise the freeze concentration process has been tested and optimised at laboratory scale, the system will be scaled up at the pilot scale. The pilot plant will be operated at the optimal operation conditions obtained at laboratory scale.
- Determine the efficiency and robustness of the proposed technology (AnMBR-FC) at pilot scale as well as the sustainability (LCA, LCC) for this coupled technology.

Expected results: Recover >90% of P from DWP using AnMBR coupled with freeze concentration, understand the underlying technical set-up of pilot scale AnMBR-FC and comprehend the of the final products.