Design of sustainable production chains for protein biomass from CO2

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Project Description

To reduce greenhouse gas emissions and land use for animal and human food production, industrial and academic scientists explore CO2-based processes for production powered by renewable electricity.
This project investigates and develops new options for so-called 'zero-emission' microbial production processes. This is done through techno-economic analysis of candidate processes that electrochemically reduce CO2 and water and ferment the electroreduction product(s) to obtain higher-value products such a single-cell protein. Therefore, fermentation process models are integrated with electrochemical process models. The designed overall process options are compared with respect to their economics and life cycles. The results should guide decision makers.

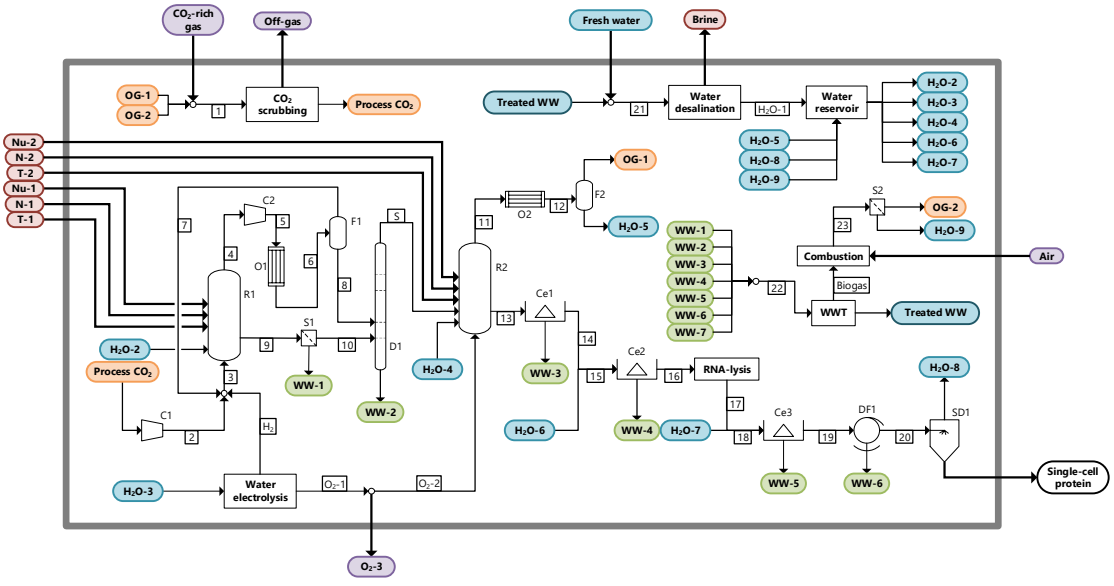

Figure: Flowsheet option.