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## Feasibility assessment of energy-neutral microalgae-based wastewater treatment plants under Spanish climatic conditions

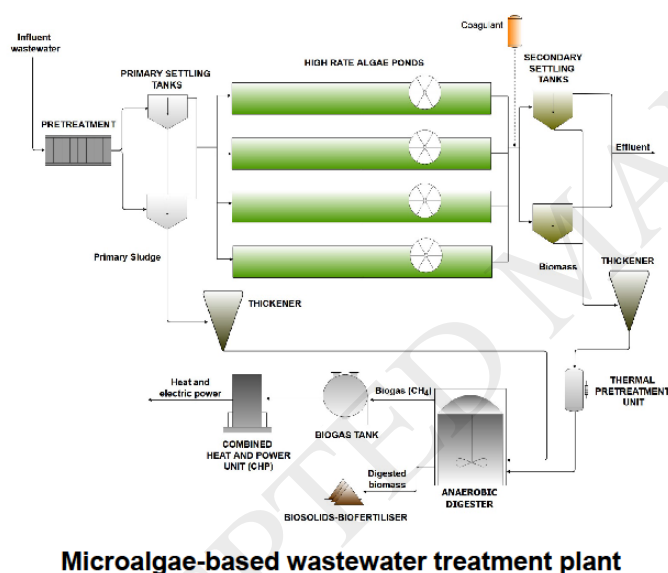
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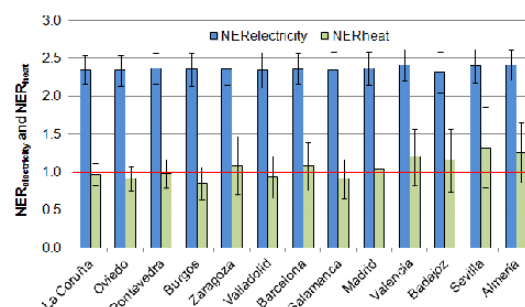
### Graphical abstract



### Energy balance:

$$NER_{electricity} = \frac{E_{output,electricity}}{E_{input,electricity}}$$

$$NER_{heat} = \frac{E_{output,heat}}{E_{input,heat}}$$



### Highlights

- Microalgae-based wastewater treatment plants assessed in terms of energy balance.
- Anaerobic digestion as a means to recover energy from microalgae-bacteria biomass.
- Spanish climatic conditions allow for a positive electrical energy balance.
- A positive heat balance is not feasible in all the locations.
- The environmental temperature is a key variable in the heat balance.

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