



Water Alliance

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19 September 2019

NX Filtration: your membrane partner

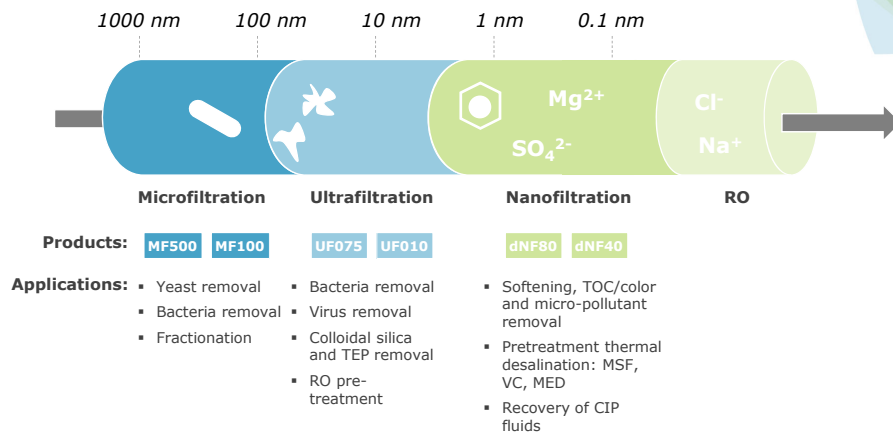
Manufacturer of MexFil™ **Innovative Hollow Fiber Membrane Products** for Microfiltration, Ultrafiltration and Nanofiltration applications

Experienced Membrane Team and **Strong IP** position creating the basis for novel membrane production technologies and innovative membrane products

Industrial scale production facility with **Flexible Production Process** based on **green chemistry**

Membranes based upon **Chemically Resistant** polyethersulfone (**PES**) chemistry, inside/out operation and pore sizes ranging from MF to tight NF

Our MexFil™ product range and applications



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NANOWIN – tender experience (demonstration voucher)

Positive:

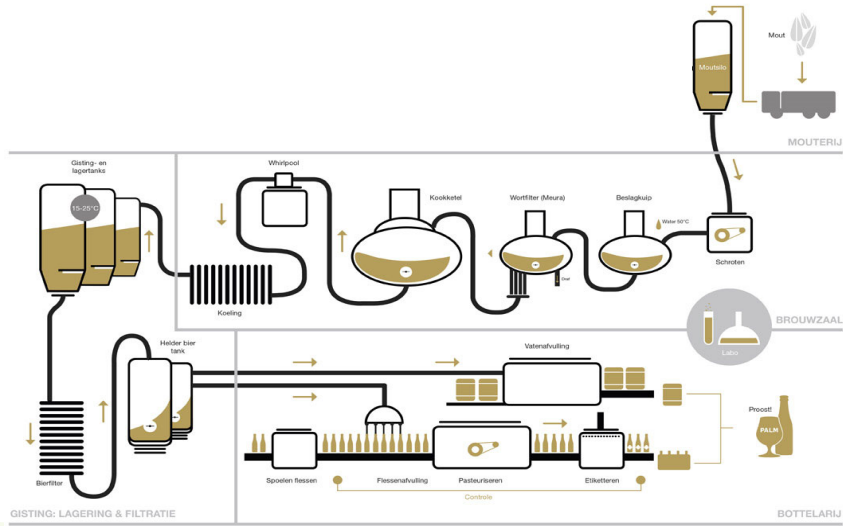
- Short tender manual
- Predefined format & size project proposal
- Comprehensive financial format
- Short and fast procedures (although VIDA is a H2020-project)

To be improved / clarified:

- financial rules for investment & depreciation are not clear / beneficial for SME's in case of demo-projects, because the limitation to 1-year projects minimize the revenues by subsidy significantly having a negative impact on cash-flows
- A lot of financial details have to be supplied after awarding (such as profit/lost account)

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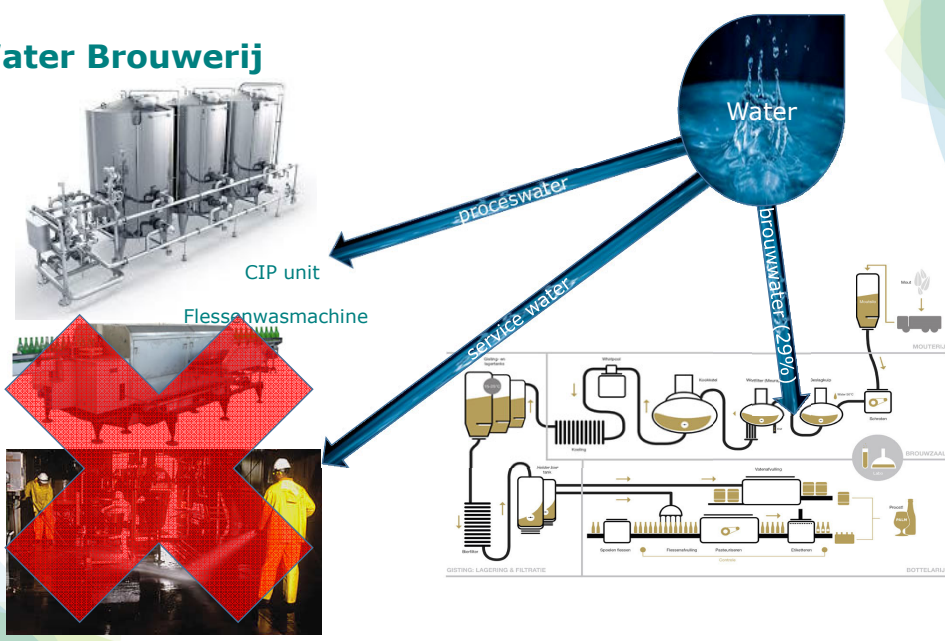
Voorbeeld: Brouwerij



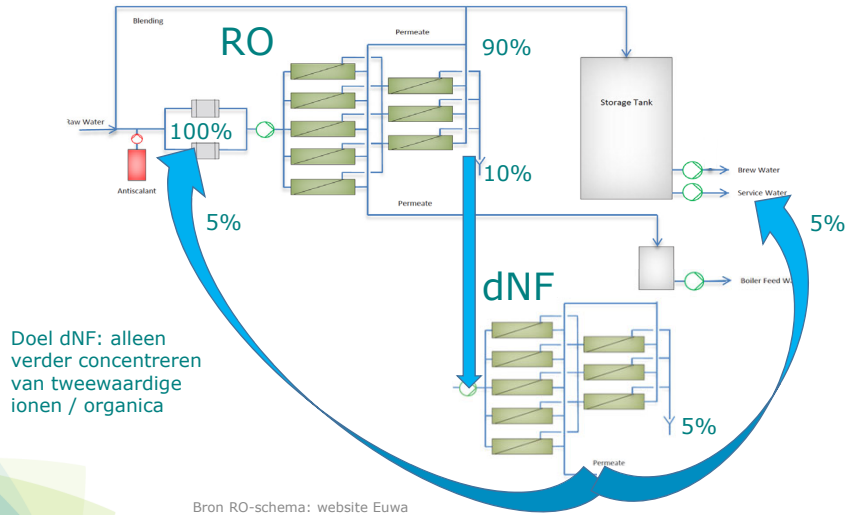
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Bron brouwerij schema: website Palm brouwerij

Water Brouwerij

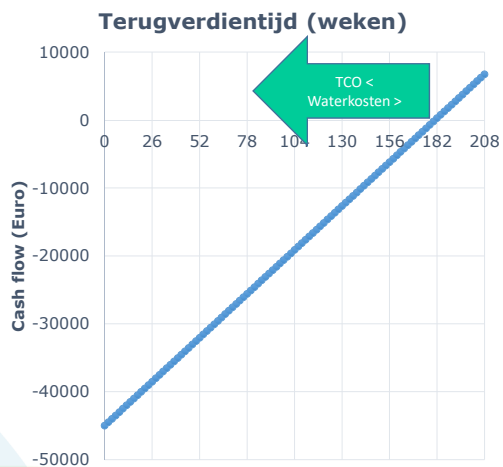


Voorbeeld VIDA-project in Brouwerij



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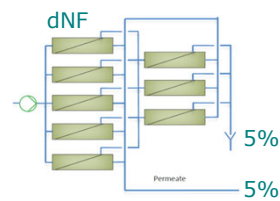
Terugverdiëntijd VIDA



RO Capaciteit: 60 m³/h
(brouwerijgrootte: 1.5x10⁶ hl/jaar @ 50% blending RO)

dNF Capaciteit: 3 m³/h
(besparing: 12930 m³/jaar)
dNF CAPEX: €45000
dNF OPEX: €1/m³
dNF Recovery: 50%

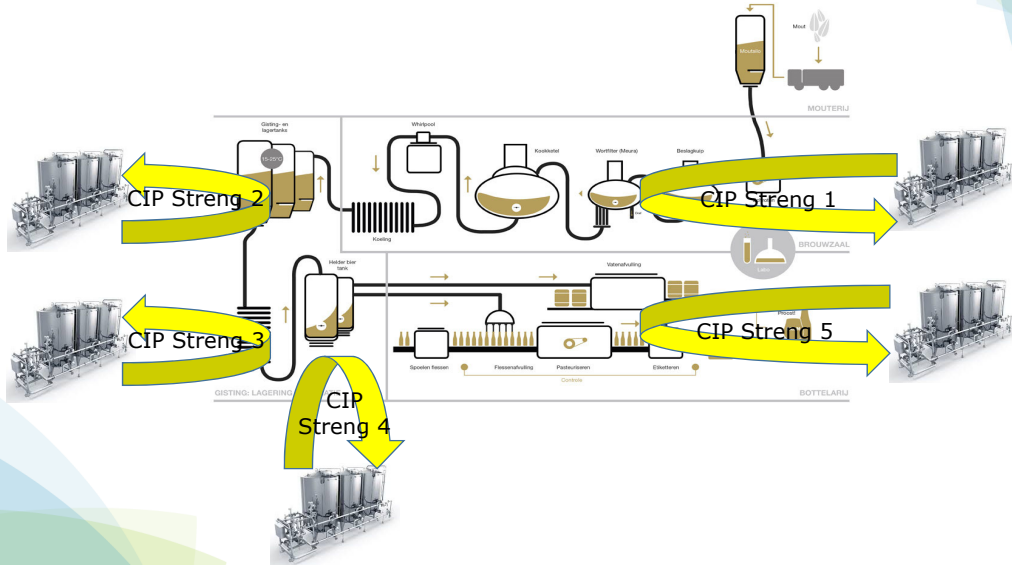
Water + afvalwater: €2/m³



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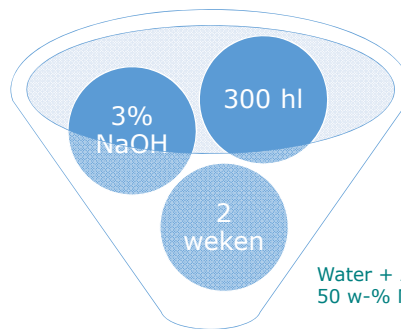
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CIP Brouwerij



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Terugwinning CIP Streng 1

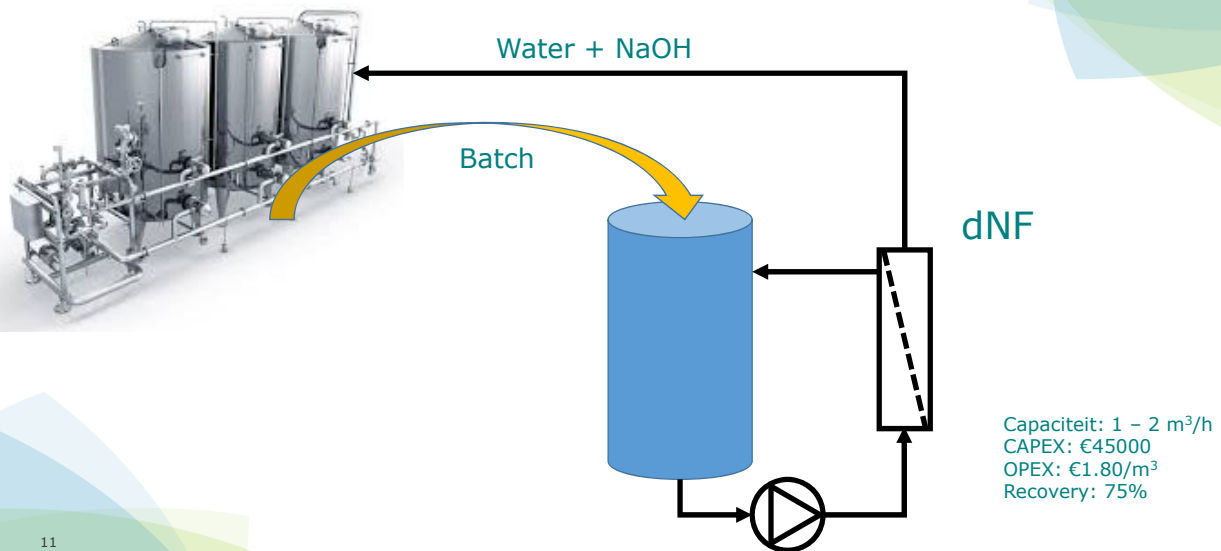


Water + Afvalwater: €2/m³
50 w-% NaOH: €0.30/kg

€15600/jaar
(= €20/m³)

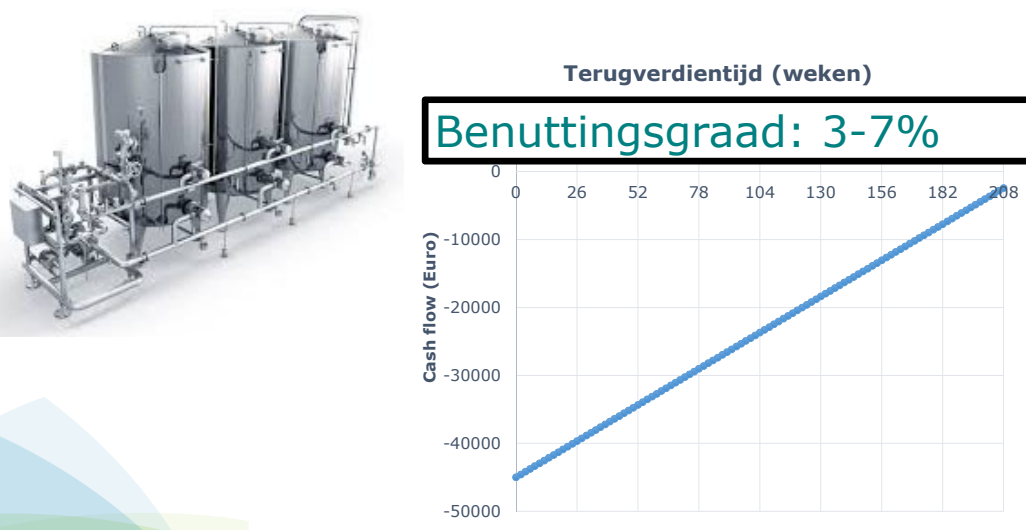
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Terugwinning CIP Streng 1



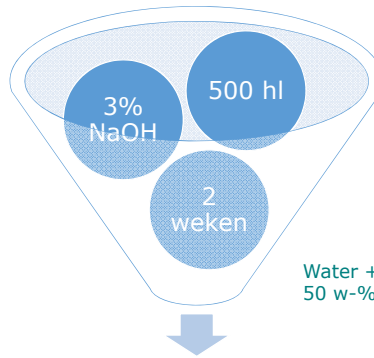
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Terugwinning CIP Unit 1



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Terugwinning CIP Streng 1 + Streng 2



Water + Afvalwater: €2/m³
 50 w-% NaOH: €0.30/kg

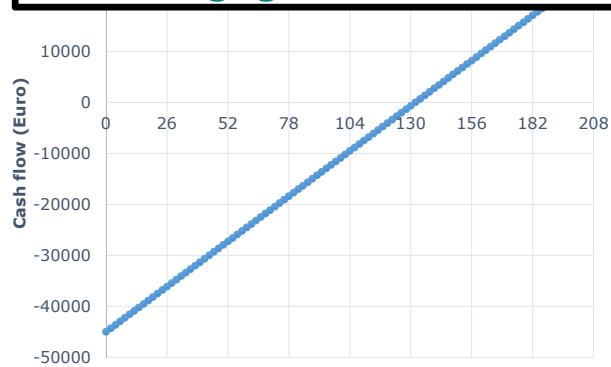
€26000/jaar

Terugwinning CIP Streng 1 + Streng 2



Terugverdiëntijd (weken)

Benuttingsgraad: 5-11%



Conclusies / Aanbevelingen

1. Reduceren van water e/o chemicaliën is altijd attractief, maar probeer vanwege financiën de maximale benuttingsgraad uit installatie te halen.
2. Stroomopwaarts-oplossingen prefereren boven end-of-pipe-oplossingen, meerwaarde product, invloed afvalwaterzuivering.
3. Lage CAPEX gewenst of zelfs een must? Houd het simpel!
4. Terugverdientijd is één, milieueffecten en verhaal naar de eindklant is twee.
5. Uitdagingen? Temperatuur, voldoende organica-retentie, reinigingsadditieven, osmotische druk.

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