

WATER SMART INDUSTRIAL SYMBIOSIS

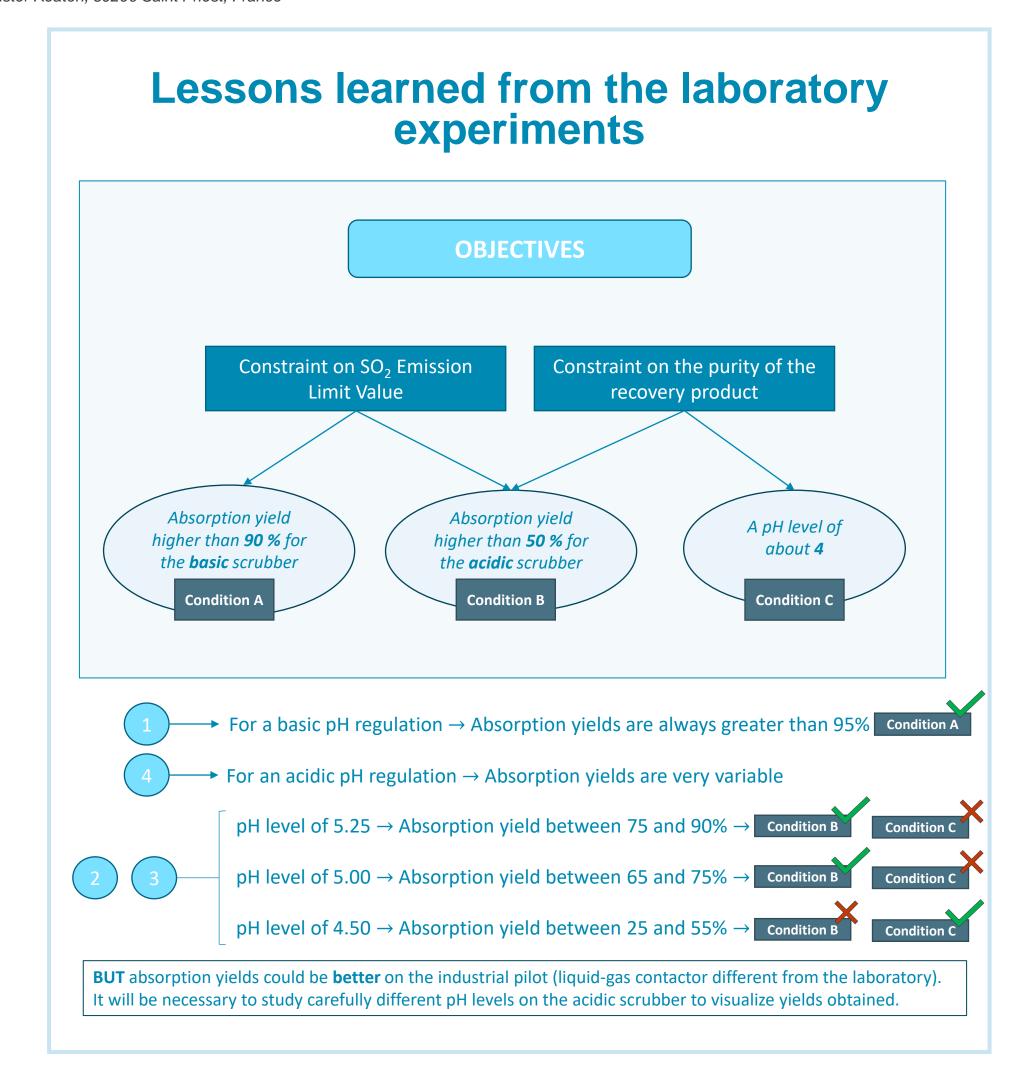
# TRANSITION FROM LINEAR TO CIRCULAR ECONOMY

in the nexus of the water sector & intensive water consuming industries.

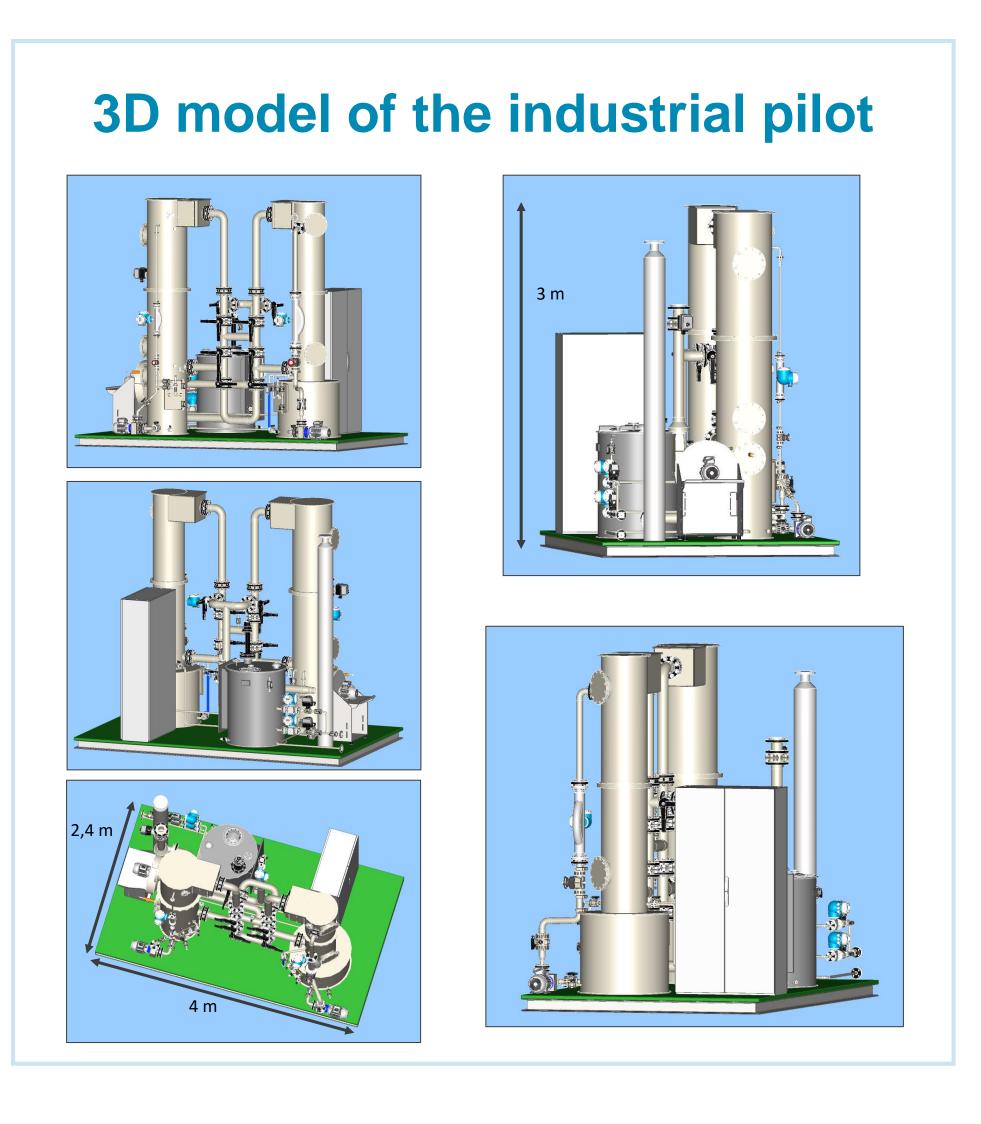
### CS8 – RECOVERY OF SULPHUR AT THE CHEMICAL PLATFORM OF ROUSSILLON

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## Results of the laboratory experiments Evolution of the absorption yield as a function of pH level Evolution of the absorption yield as a function of pH level Target pH level: 8 Target pH level: 5 65% O 0,5 % of SO2 and a initiale concentration of 0,1M of SO3 O 0,5% of SO2 and a initiale concentration of 1,5M of SO3 O 0,5 % of SO2 and a initiale concentration of 1,5M of SO3 pH level Evolution of the absorption yield as a function of pH level volution of the absorption yield and the pH level as a function of time $0.5 \% SO_2$ ; $[SO_3]i = 0.1 \text{ mol/L}$ ; $T = 50 \degree C$ $0.5 \% SO_2$ ; $[SO_3]i = 0.1 \text{ mol/L}$ ; T = 50 °CO Regulation at a pH level of 4.50 O Regulation at a pH level of 5.00 O Regulation at a pH level of 5.25 O Regulation at a pH level of 8.00 time (min)



#### First results of process simulation Estimation of the evolution of the liquid concentration in the pilot scrubbers as a function of time **OBJECTIVES** 2,0 mol/L for the 4,5 mol/L for the valuation product absorption solution 2,0 → For **high percentage** of SO<sub>2</sub> in the fumes (1%), target concentrations are **reached** within **24 hours** <sup>20,0</sup> Time (h) <sup>30,0</sup> → For lower concentrations, a Recovered product in the first scrubber - 1,0 % of SO2 in the flue gas **different regulation system** is Absorption solution in the second scrubber - 1,0 % of SO2 in the flue gas needed to achieve these target - - Recovered product in the first scrubber - 0,3 % of SO2 in the flue gas - - Absorption solution in the second scrubber - 0,3 % of SO2 in the flue gas concentrations. Industrial pilot construction schedule Sizing, specifications, Supplier selection On-site pilot delivery quotation etc. Start of the studies End of the test February October **August** December February 2023 2023 2023 2023 2023 2024 2023 2024 Field tests pilot test construction



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