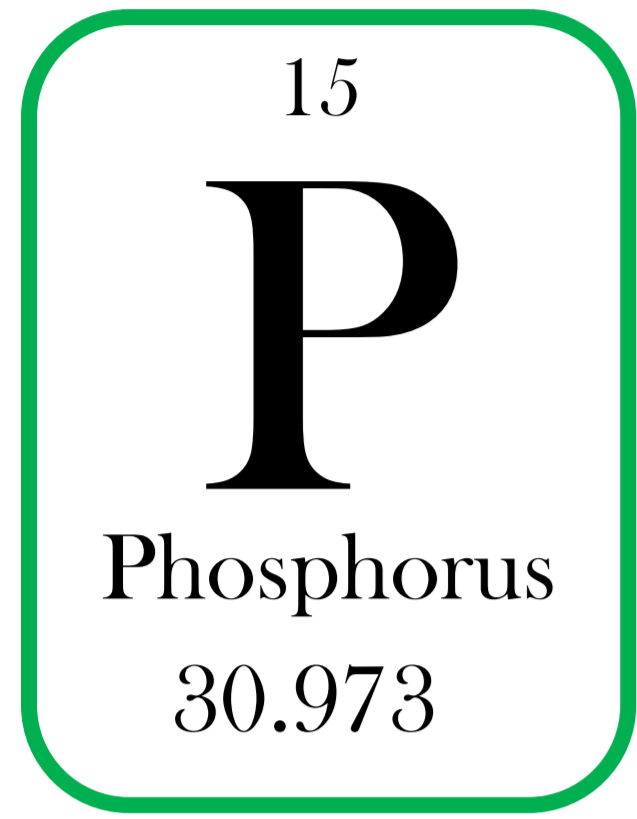




Sandvik case study – Resource recovery from spent acid

Business unit: AB Sandvik Materials Technology - Location: Sandviken, Sweden - Production: Stainless steel

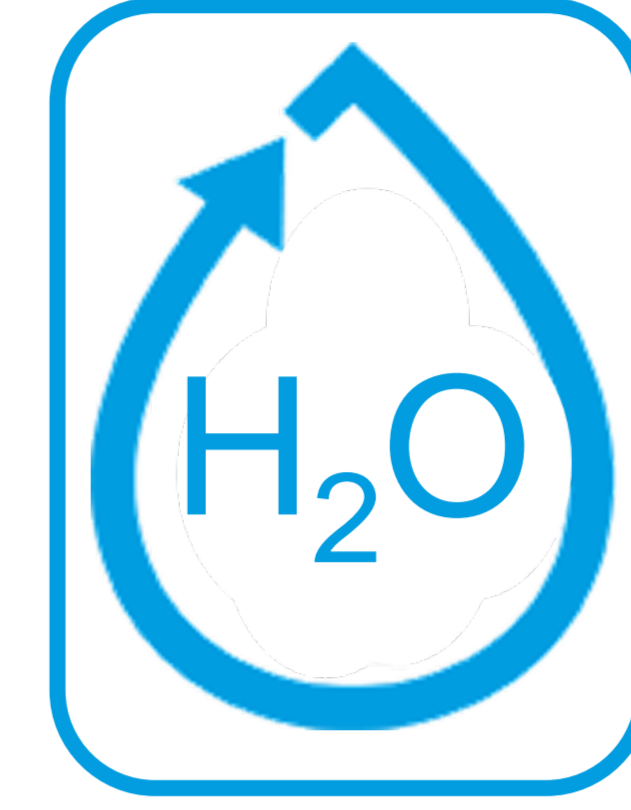
Current situation



P-acid is neutralized and landfilled
No recovery



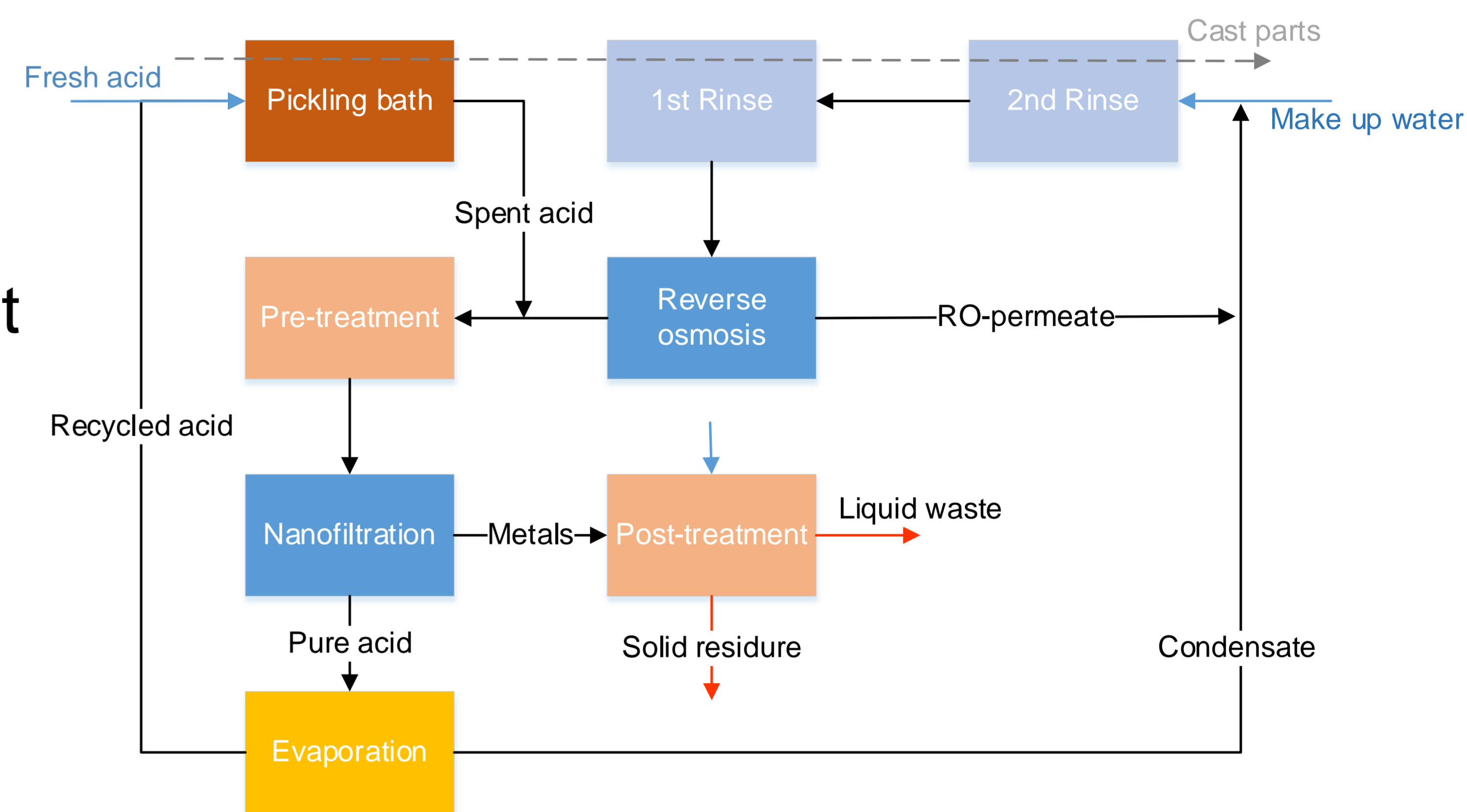
Neutralized and landfilled P-acid contains metals
No recovery



Rinsing bath is discharged into WWTP
No closed loop

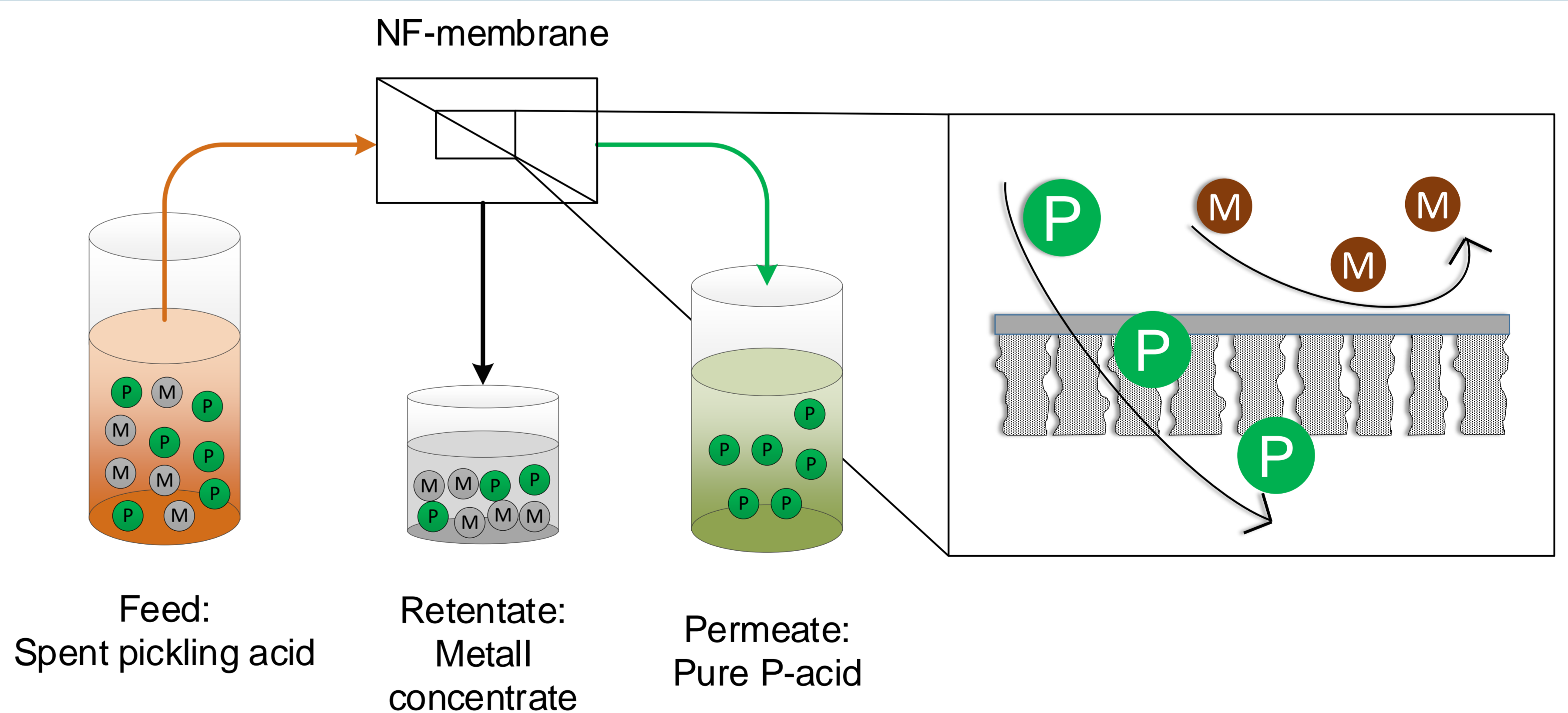
Objectives

- Demonstrate NF for P-recovery from spent acid
- Demonstrate RO for water and resource recovery from rinsing bath, towards zero liquid discharge
- Optimize the interplay of existing and new treatment units to minimize energy and H₂O consumption
- Minimize waste to landfill
- Identify suitable technologies for metal recovery
- Screening of innovative membrane technologies such as layer-by-layer modification

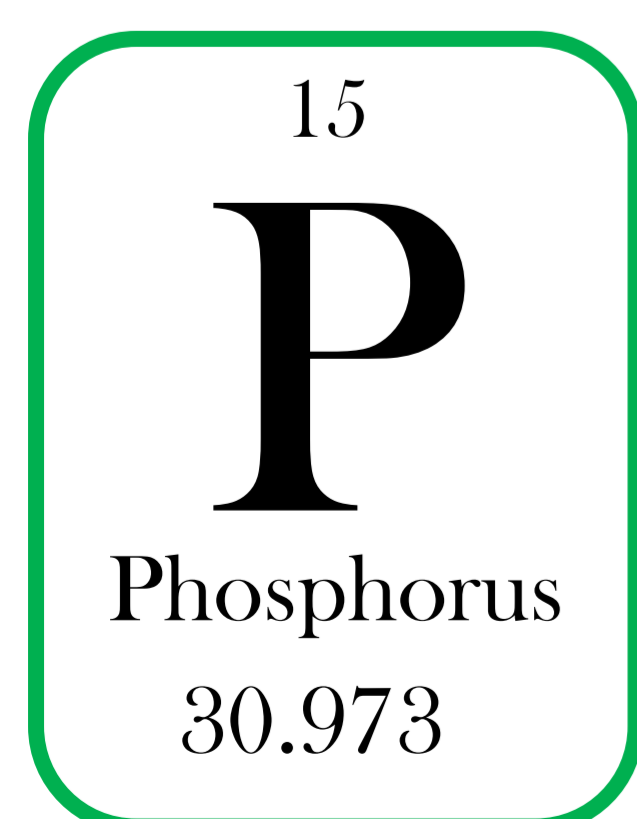


Technology: Nanofiltration

- Neutral and monovalent molecules can pass the membrane such as P-acid (H₃PO₄)
- Multivalent molecules (metals) are retained



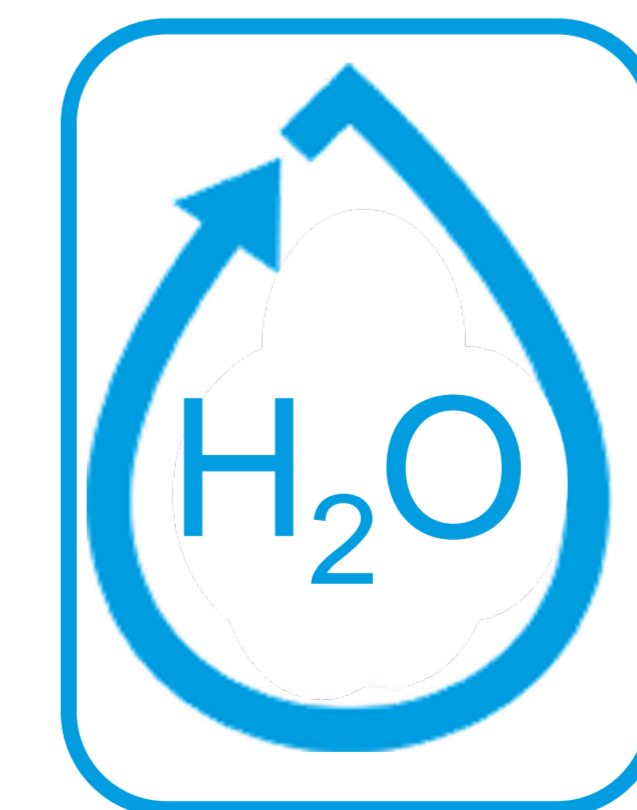
Project outcome



>50% recovery



Reuse in product



Towards ZLD

www.inspirewater.eu

