CORALIS

Creation Of new value chain Relations through novel Approaches facilitating Long-term Industrial Symbiosis

Grant Agreement No 958337

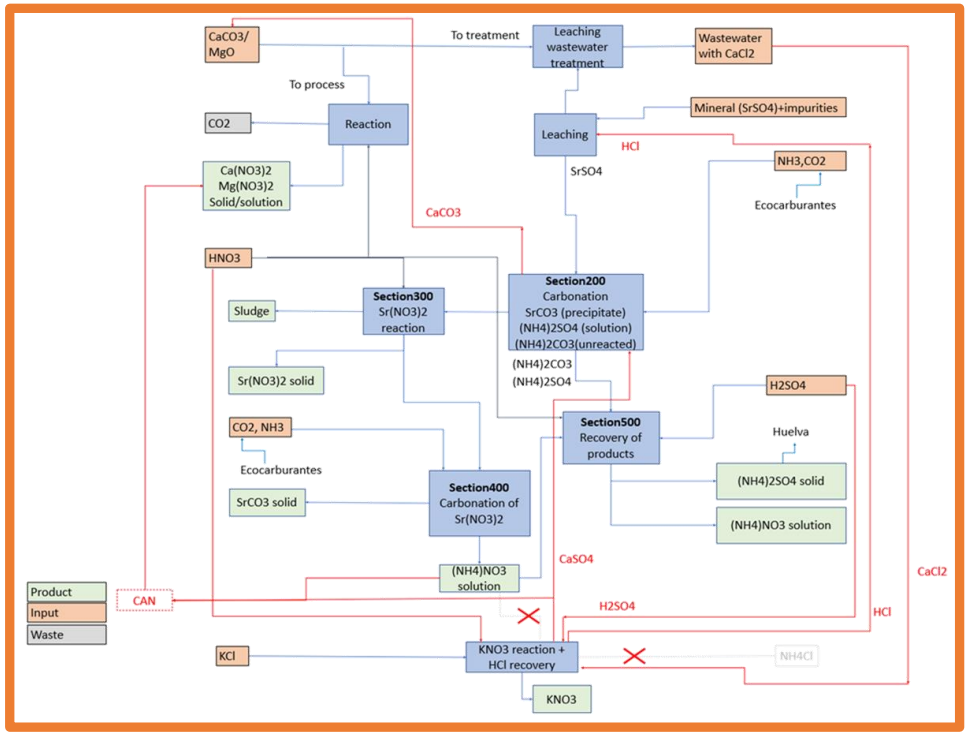
Guideline 4.15: Techno-economic feasibility tools

Deliverable 10.5

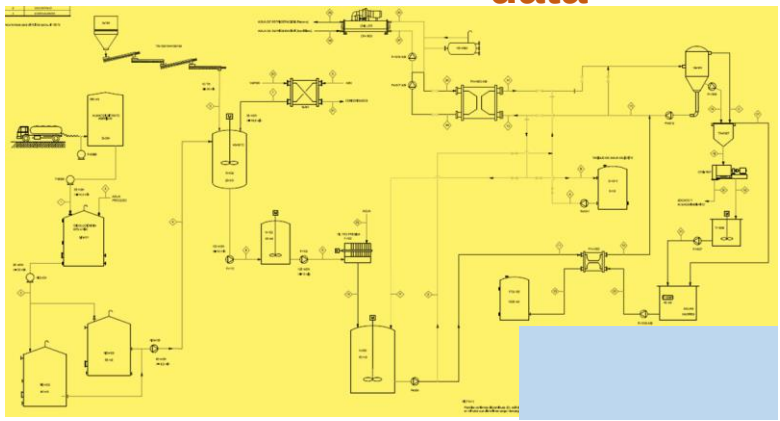
Working Package: WP10

MFCA Techno-economic evaluation of the technologies enabling IS interactions

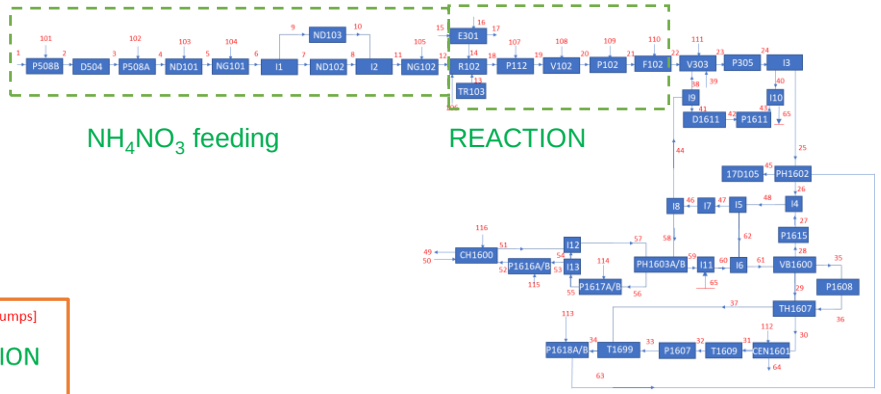
1. Identify targeted processes affected by IS



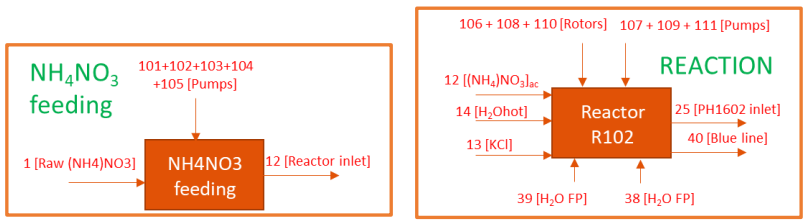
2.Check P&ID and collect historical process data



3. Block diagram with mass and energy flows involved



4. Define control units



MFCA. Techno-economic evaluation of the technologies enabling IS interactions

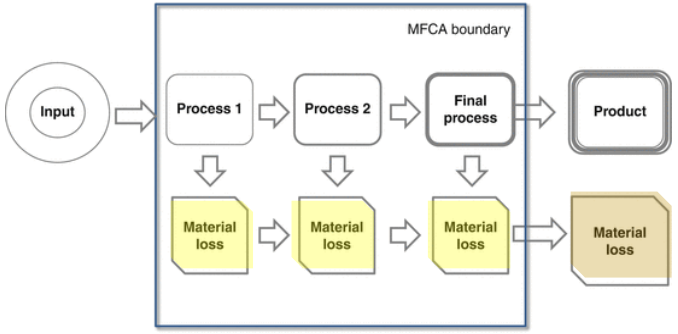
5. Match flows & units

FLOWS	PROCESSES	Flows in	Flows out
1	P508B	E1 +E101	E2
2	D504	E2	E3
3	P508A	E3 +E102	E4
4	ND101	E4 +E103	E5
5	NG101	E5 +E104	E6
6	I1	E6	E7 +E9
7	ND102	E7	E8
8	ND103	E9	E10
9	I2	E8 +E10	E11
10	NG102	E11 +E105	E12
11	E301	E15 +E16	E14 +E17
12	R102	E12 +E14 +E106 +E13	E18
13	TR103		E13
14	P112	E18 +E107	E19
15	V102	E19 +E108	E20
16	P102	E20 +E109	E21
17	F102	E21 +E110	E22
18	V303	E22 +E111 +E38 +E39	E23
19	P305	E23	E24

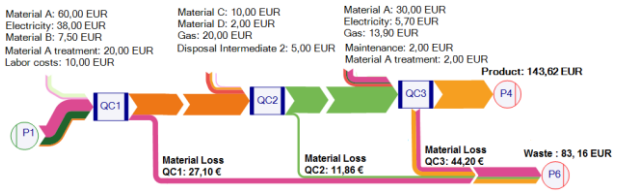
6. Characterize flows (P, T, m, q, E)

1	2	3
AN 80%	Agua de proceso	Solución N20
3,42	2	6,4
1.442	996	1.274
4.929	1.972	6901
986	1.972	2.958
0	0	0
3.943	0	3.943
0	0	0
0	0	0
0	0	0
75	20	46
N/D	N/D	4

7. Identify waste flows

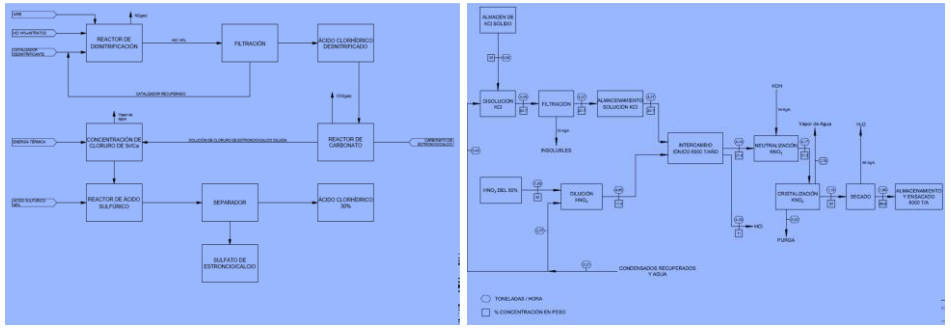


8. Transform flows into exergy & monetary units

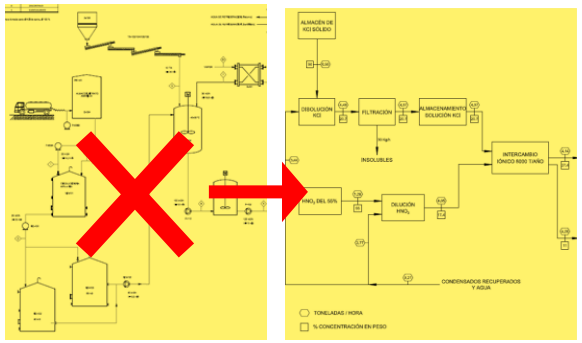


MFCA. Techno-economic evaluation of the technologies enabling IS interactions

9. IS solution: characterize flow diagrams, new inputs, outputs and processes



10.Evaluate process & equipment change (CAPEX/OPEX)



11. Match new flows and control units

FLOWS	PROCESSES	Flows in	Flows out
1	P508B	E1 +E101	E2
2	D504	E2	E3
3	P508A	E3 +E102	E4
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12	R102	E12 +E14 +E106 +E13	E18
13	TR103		E13
14	P112	E18 +E107	E19
15	V102	E19 +E108	E20
16	P102	E20 +E109	E21
17	F102	E21 +E110	E22
18	V303	E22 +E111 +E38 +E39	E23
19	P305	E23	E24

12. Set case studies (estimate flow characteristics)

1	2	3
AN 80%	Agua de proceso	Solución N20
3,42	2	6.4
1.442	996	1.274
4.929	1.972	6901
986	1.972	2.958
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3.943	0	3.943
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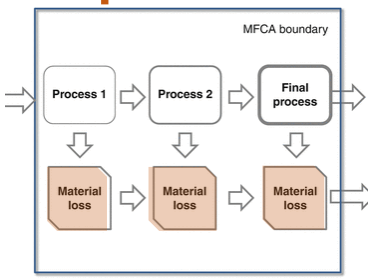
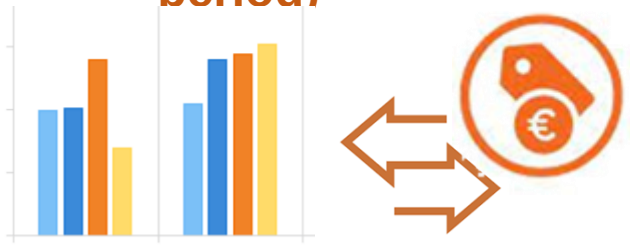
0	0	0
0	0	0
75	20	46
N/D	N/D	4

MFCA. Techno-economic evaluation of the technologies enabling IS interactions

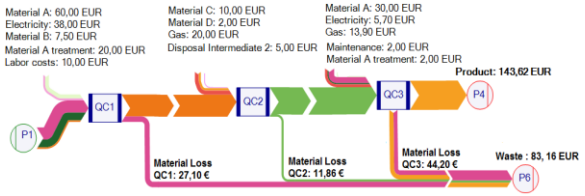
13. Update waste



15. Compare process economics before and after IS to establish guidelines for pricing of exchanged materials and energy flows (e.g. for a given payback period)



14. Transform flows into monetary units + include CAPEX/OPEX



16. Identify potentials and limitations of the methodology