



ERA-MIN 2

RESEARCH & INNOVATION PROGRAMME
ON RAW MATERIALS
TO FOSTER CIRCULAR ECONOMY

Li+WATER:

Membrane electrolysis for resource-efficient lithium and water recovery from brines

Victoria Flexer (Project coordinator,
Universidad Nacional de Jujuy, Argentina)

ERA-MIN 2 Final
Conference and Final
Seminar of Call 2017 projects
18-19th November 2021



Co-funded by the Horizon 2020 programme
of the European Union





ERAMIN 2

- **Main call topic:** 3. Processing, Production and Remanufacturing

Subtopic: 3.1: Increase resource efficiency in resource intensive production processes

- **Start:** 1st April 2018, originally 24 months, extended to 48 months
- **End date:** 31st March 2022
- **Project consortium:**

PI: Victoria Flexer. Funding: National Minister of Science and Technology, Argentina



UNJu
Universidad
Nacional de Jujuy

(university)

PI: Korneel Rabaey. Funding: FWO, Flanders, Belgium



GHENT
UNIVERSITY

(university)

PI: Tomas Rydberg. Funding: VINOVA, Sweden **IVL** Swedish Environmental Research Institute (non-profit research organization)

- **Start-end TRL:** 2-5
- **Requested funding:** 329.850 €
- **Project execution:** 78.2 % (remaining funds not yet available)



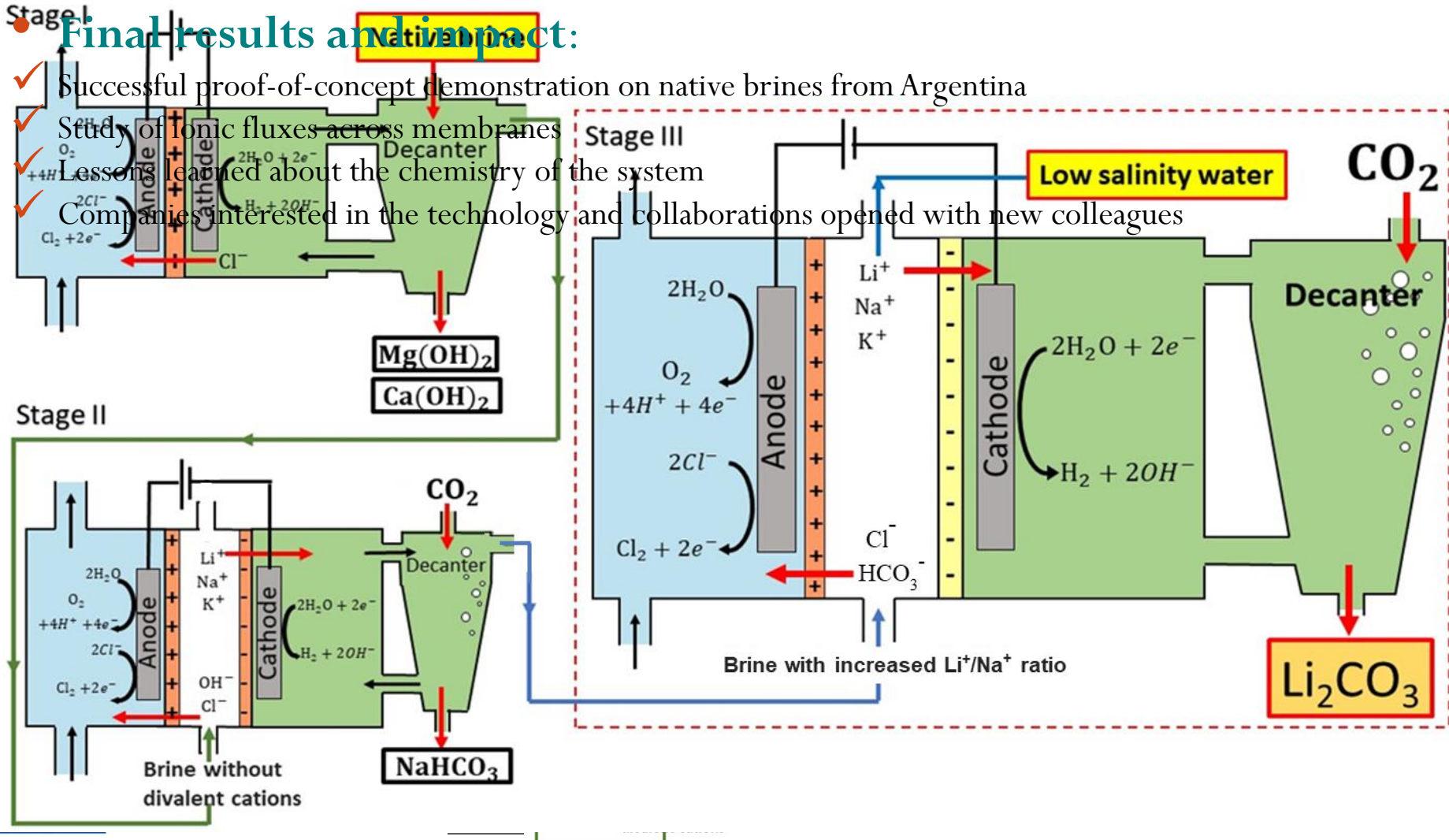
Final Results

E R A • M I N 2

- **Project objectives and expect impacts:** to recover Li_2CO_3 , together with other industrial minerals from different aqueous sources. To avoid water evaporation during brine concentration. Recovery of fresh water instead.

Final results and impact:

- ✓ Successful proof-of-concept demonstration on native brines from Argentina
- ✓ Study of ionic fluxes across membranes
- ✓ Lessons learned about the chemistry of the system
- ✓ Companies interested in the technology and collaborations opened with new colleagues





- **Outputs**

- ✓ 1 patent application submitted, Application number 62781452 (17-12-2019)

- ✓ 4 peer-review articles:

Bonin *et al.*, **Separation and Purification Technology**, 2021, 275, 119177

Diaz Nieto *et al.*, **Separation and Purification Technology**, 2020, 252, 117410

Torres *et al.*, **Journal of Membrane Science**, 2020, 615, 118416

Diaz Nieto *et al.* **Water Research**, 2019, 154, 117

4 manuscripts currently under preparation

- ✓ ~ 12 Academic conference presentations

- **Communication and dissemination activities:**

- ✓ Several invitations to meetings with the Argentinean government

- ✓ Several meetings with mining companies

- ✓ 2 dissemination activities for the general public





ERA-MIN2 • Lessons learnt (i.e. impact of COVID-19): get vaccinated!

- **Lessons learnt:** Different funding agencies have different requirements regarding the project, different timing for funding. ERA-MIN2 puts pressure on researchers and not on funding agencies.
- **Have you cooperated with policymakers during the lifetime of the project?**
Several meetings with Argentinean government (still ongoing)
- **Have the results been implemented by the industry to some extent?**
Ongoing pilot scale (new) project with 2 industry partners





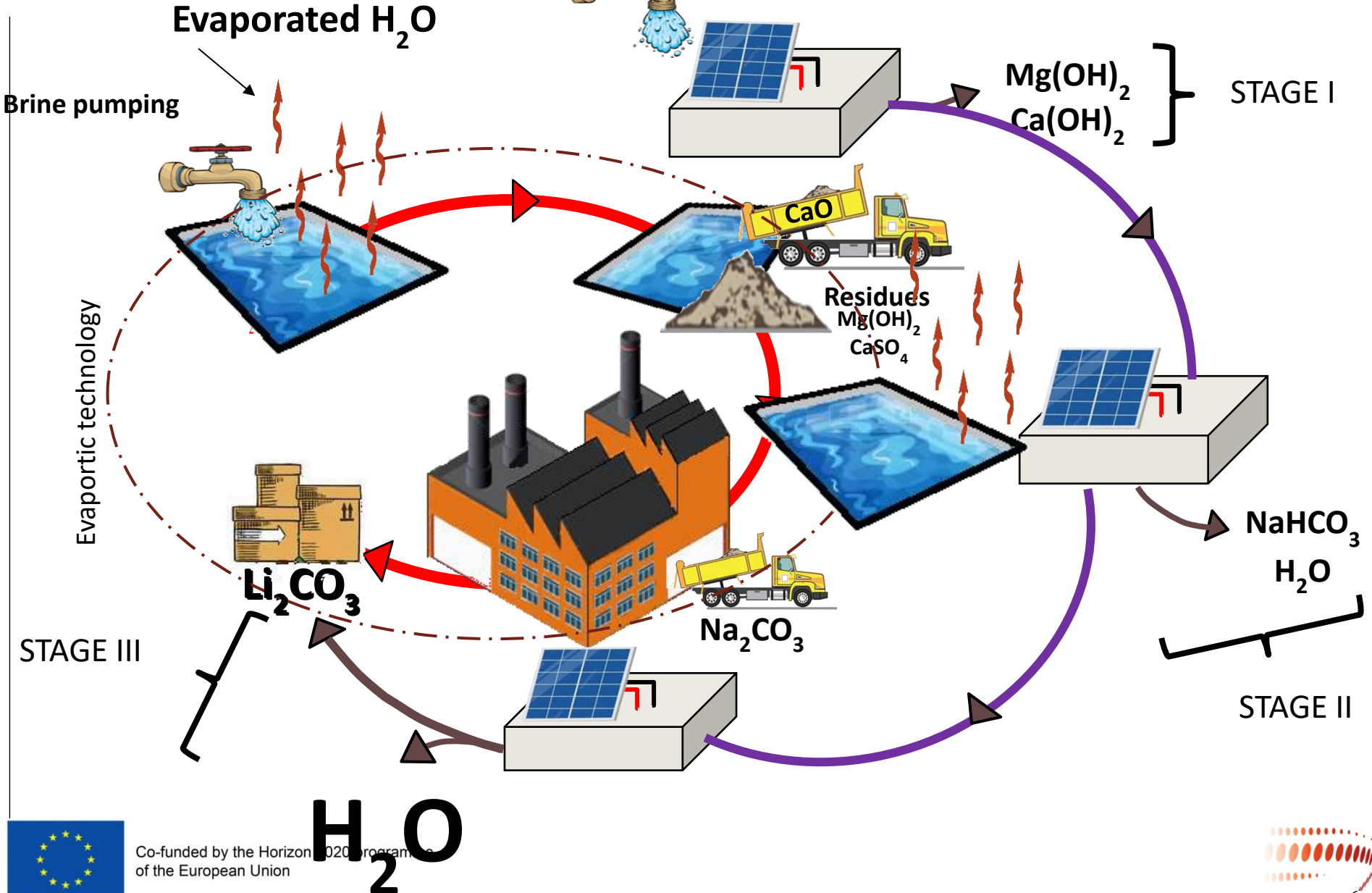
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- **Have the results contributed to white papers, regulations or standards? NO**
- **What's the biggest impact that the project has produced in the regions/countries of consortium partners?** New prospective technology available in the medium term.



Follow-up

ERA-MIN 2





- How will the research results of the project be utilised?

Currently ongoing pilot project

- Will the cooperation continue after the end of this project?

Depends on the funding available....

