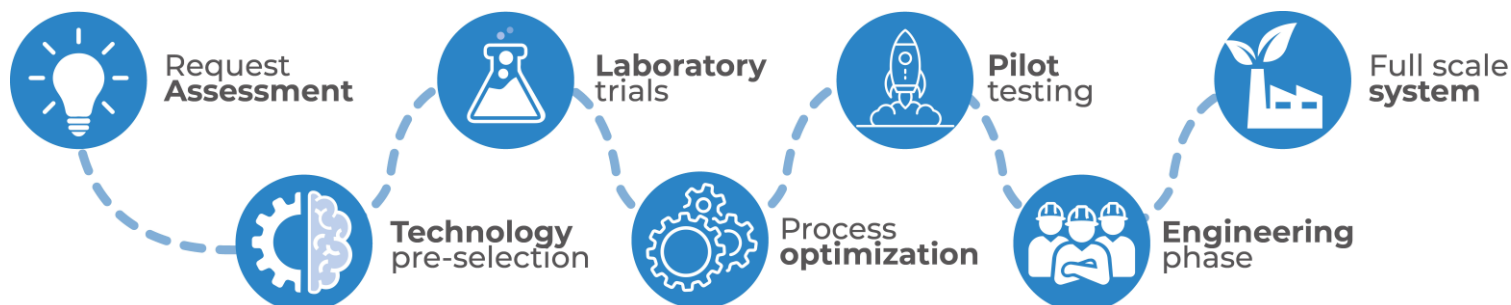


Introducing Lenntech's pilot fleet

Lenntech R&D – where research meets industry



Technologies

As a logical step before designing a reliable full-scale system, Lenntech can deliver a large range of (combined) **pilot technologies** for **long-term testing (1 - 6 m³/h)**.

- ▶ Multi-media filtration
- ▶ Ultrafiltration
- ▶ (Ultra High Pressure) nanofiltration/reverse osmosis
- ▶ Closed-circuit reverse osmosis
- ▶ (Bipolar membrane) electrodialysis
- ▶ Electrocoagulation
- ▶ Ion Exchange

Applications

- ▶ Recovery of organics, minerals and metals
- ▶ Water recovery or water reuse
- ▶ Residual stream volume minimization
- ▶ Concentrating or separating solutes
- ▶ Production of chemicals

If you wish to **treat** or **valorize** an **industrial stream** with challenging targets, we can guide you through our options. We use the results to provide you with a **reliable** and **tailor-made full-scale design**.





CONCENTRATING OR SEPERATING SOLUTES

Lenntech R&D – where research meets industry

INNOVATIVE

Thinking outside the box and combining conventional technology with unconventional ideas.

APPLIED

Adapting practical approach to target-oriented research to identify and **fill relevant gaps in industry.**

TAILOR MADE

Creating solutions for existing processes and **supporting process development.**

Wastewaters from different industries can contain solubilized substances of high value. Purifying and concentrating these solutes can have multiple advantages before further valorization. We provide solutions to allow volume reduction and accommodate downstream industrial processes.

Concentrating fertilizer streams

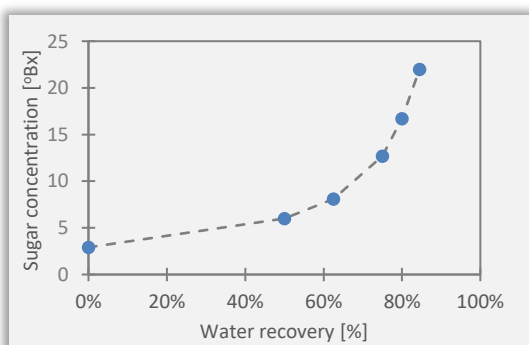
Concentrating potassium nitrate by ULTRA HIGH-PRESSURE REVERSE OSMOSIS.

- ▶ Treatment of feed water to obtain a sustainable fertilizer at desired concentrations.
- ▶ Minimizing environmental impact, close to zero carbon footprint.
- ▶ Optimization of required operating pressures to achieve low energy use.

KNO_3
concentration
> 100 g/L



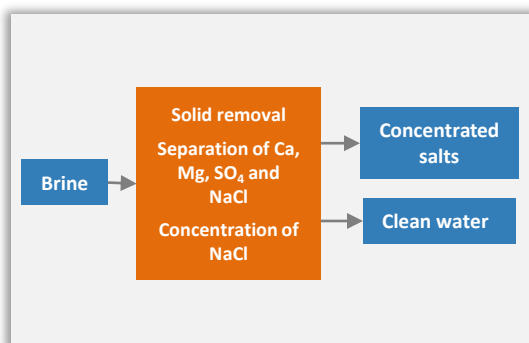
Concentrating sugar streams



Sugar stream concentration by REVERSE OSMOSIS.

- ▶ Concentration of sugars **by a factor of 9.**
- ▶ Purification of sugar streams by acid removal **over 99%.**
- ▶ Sugar retention **over 99%.**
- ▶ No chemical utilization.

Concentrating brines



Separation and concentration of ions by MEMBRANE FILTRATION and ELECTRODIALYSIS.

- ▶ Treatment of mine wastewater to reduce environmental impact of coal mine activities.
- ▶ Valorization of critical raw materials, including salts and fresh water.

LENNTECH
WATER TREATMENT Solutions