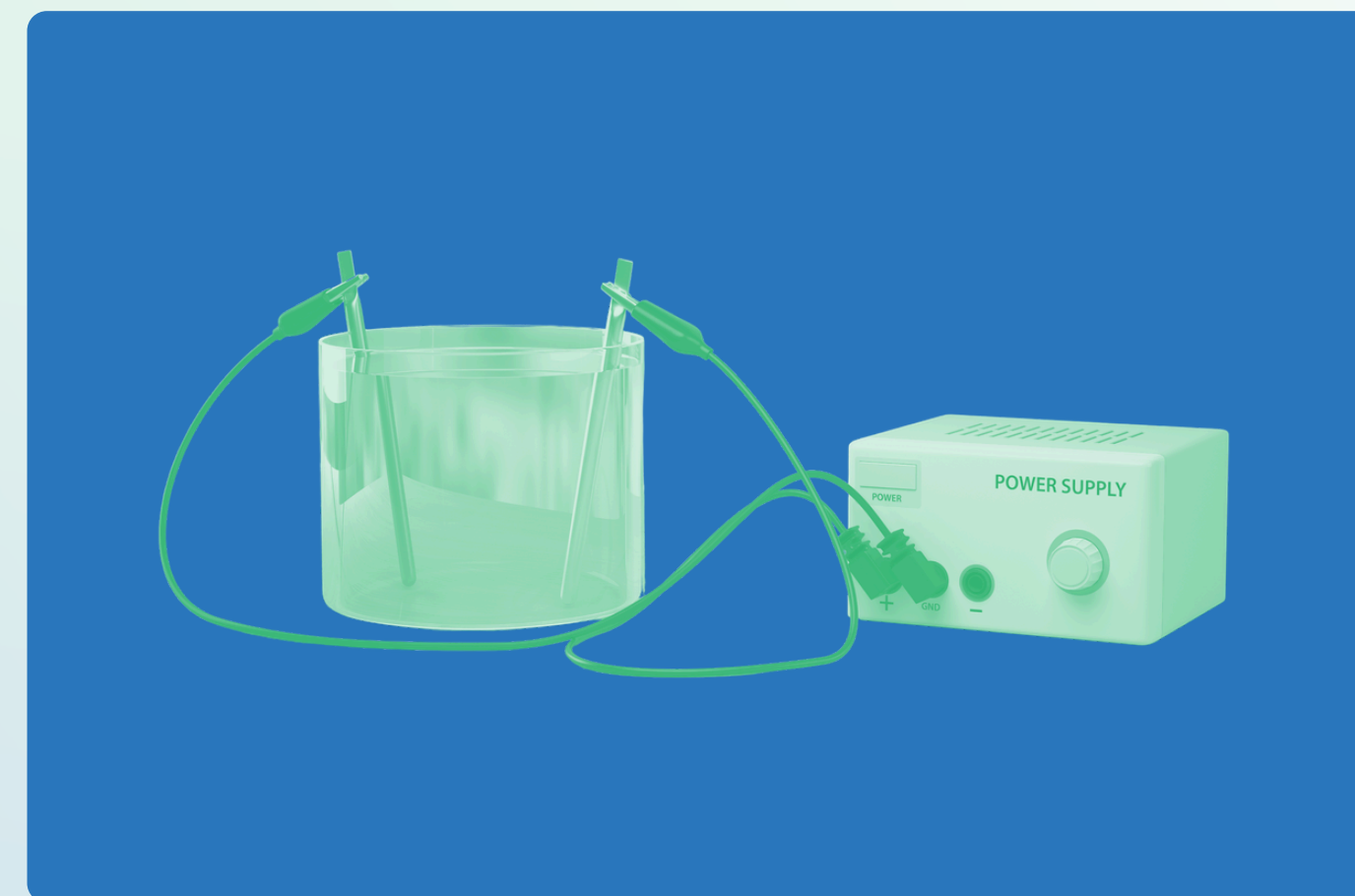




# Understanding Alkaline Electrolysis (AEL): The Basics

Alkaline Water Electrolysis uses **electricity to split water into hydrogen and oxygen**. It works with an alkaline liquid electrolyte and a porous separator that keeps the gases apart while allowing ions to move between the electrodes.





## Why AEL is Important: The Big Picture



AEL is the most established and widely deployed hydrogen production technology worldwide. Its proven reliability, long operating lifetime, and lower cost make it a key enabler of large-scale green hydrogen production.

# AEL in Our Daily Lives: Practical Impact

Hydrogen produced by alkaline electrolysis can be used to decarbonise industrial processes, produce green fertilisers, and power zero-emission buses, trucks and trains. When coupled with renewable electricity, it enables a fully sustainable value chain.





## The Crucial Difference: Why innovation is needed?



To make green hydrogen more affordable and widely available, AEL systems must become more efficient and operate at higher current densities. Innovation is also needed to reduce critical raw material content and improve overall sustainability.



## DE NORA's Role: Addressing AEL Challenges

Within CLEANHYPRO, De Nora develops advanced catalyst inks to be used in automated spray-coating processes to manufacture industrial-scale electrodes. These solutions are designed to improve performance, durability, and readiness for large-scale deployment.

