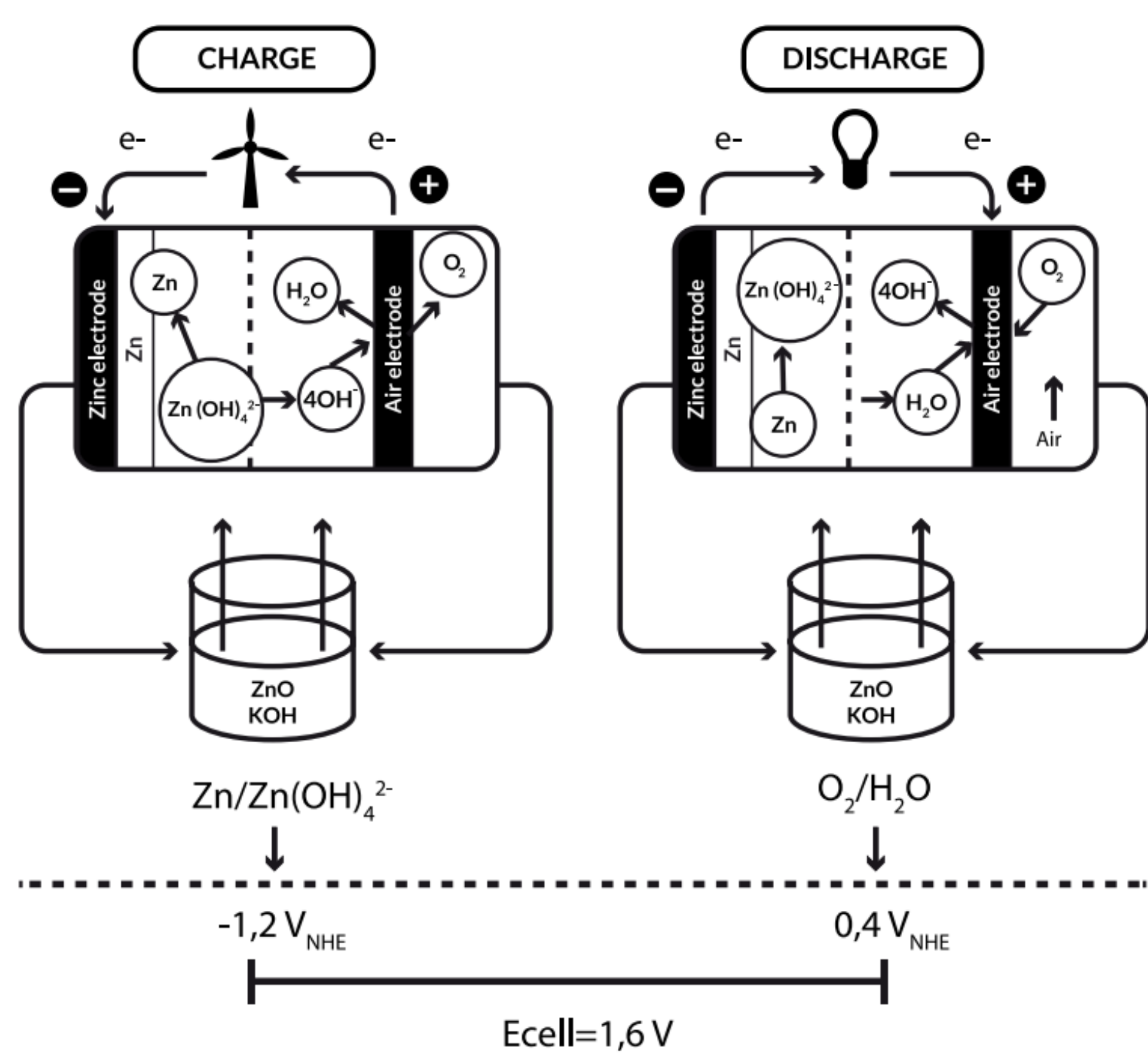
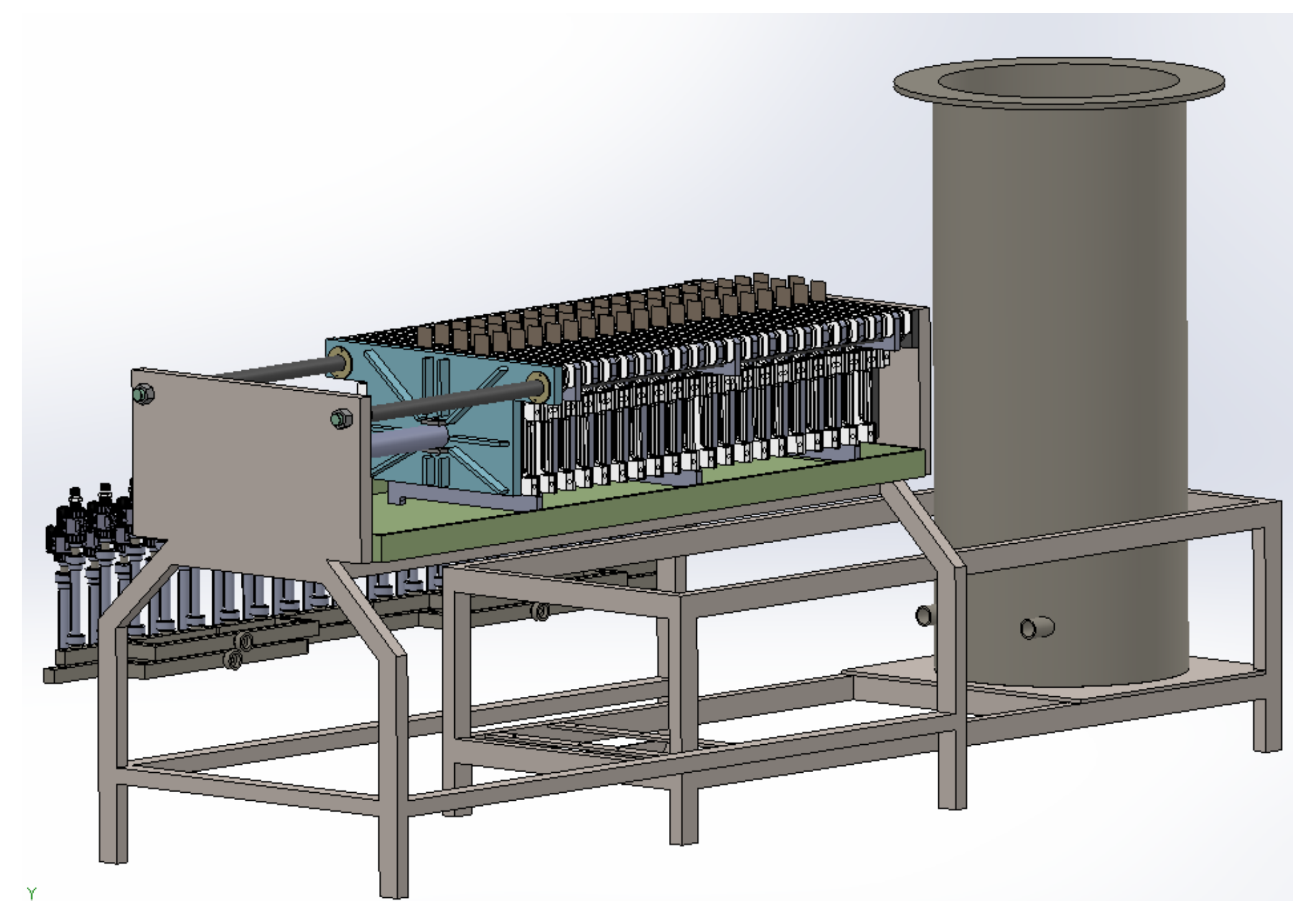
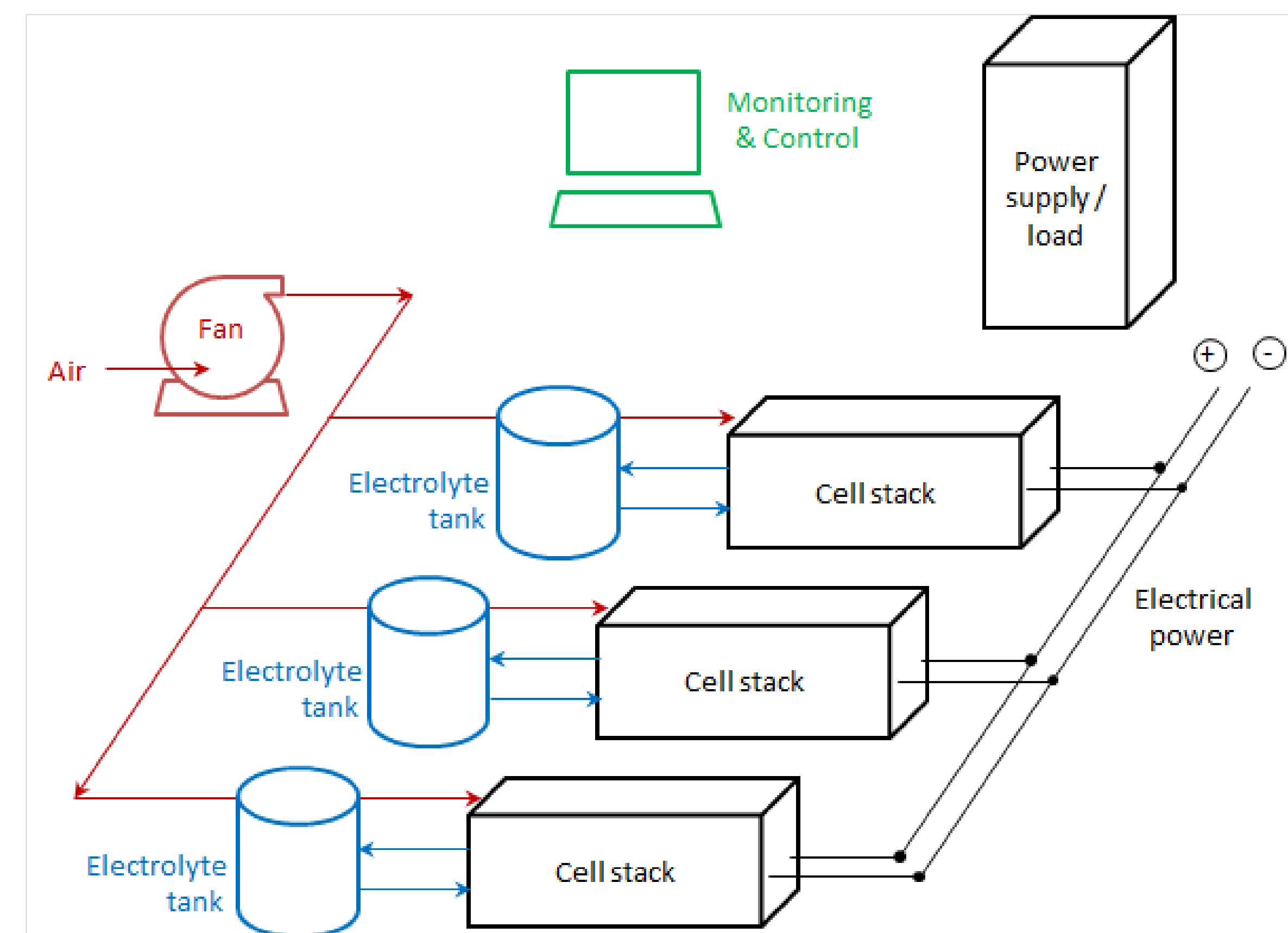


Técnicas Reunidas is developing zinc-air flow battery technology for stationary energy storage applications. Within this broad objective the LIFE ZAESS project aims to demonstrate a Zinc-Air Energy Storage System for renewable energy integration. The project includes the design and construction of a pilot plant, a technical and economic validation of zinc-air flow battery technology, an environmental impact analysis and legal and regulatory assessment. The pilot plant has a rated power and energy of 1 kW, 4 kWh. www.zaess.eu

FROM ZINC-AIR REDOX FLOW BATTERY TO ZAESS PROJECT



	Nominal	Total
Power		1 kW
Energy		4 kWh
Voltage		20 V
Current		50 A
Capacity		200Ah
Electrolyte		900 L
DoD		20-40%



STATUS

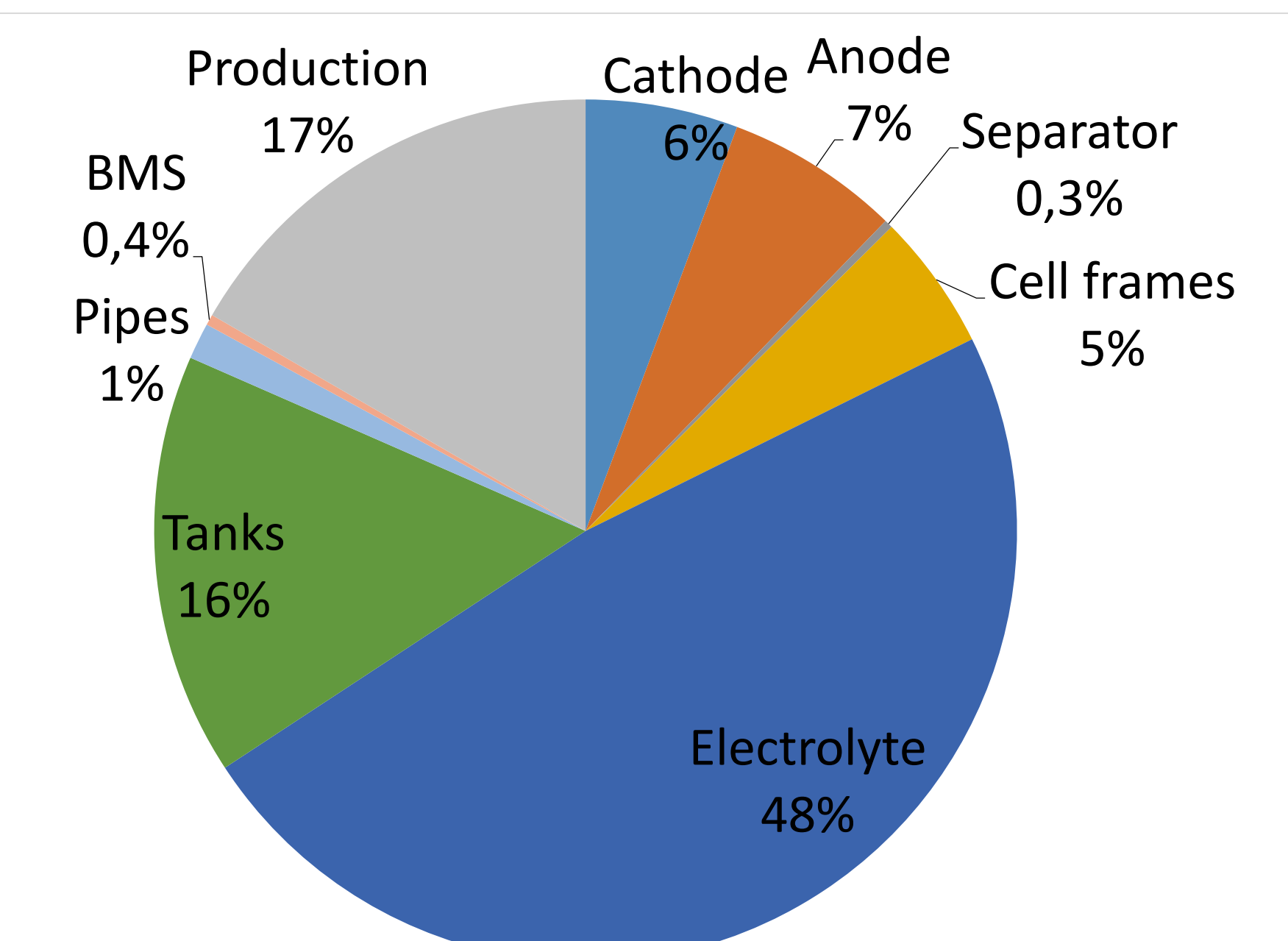


Challenges in scale-up

- 3 electrodes (non-optimal BUT good as baseline to evaluate system performance)
- Leakage → uniform pressure distribution
- Ohmic resistance → thick current collectors
- Separator movement → plastic meshes
- Gas diffusion electrode flooding

NEXT STEPS

- Environmental Assessment
 - The environmental footprint of the 1 MW system will be analysed, with a special focus on GHG emissions, and a comparison will be made with the footprint of a baseline scenario without storage
- Legal & Regulatory Assessment
 - The purpose of these works is to identify the legal and regulatory framework and the possible barriers to carry out the implementation of the Zinc-Air technology for renewable energy integration



Breakdown of the environmental impact (CO₂eq) of the different components of the battery