BALIHT

DEVELOPING A NEW ORGANIC REDOX FLOW BATTERY SUITABLE TO WORK UP TO TEMPERATURES OF 80°C

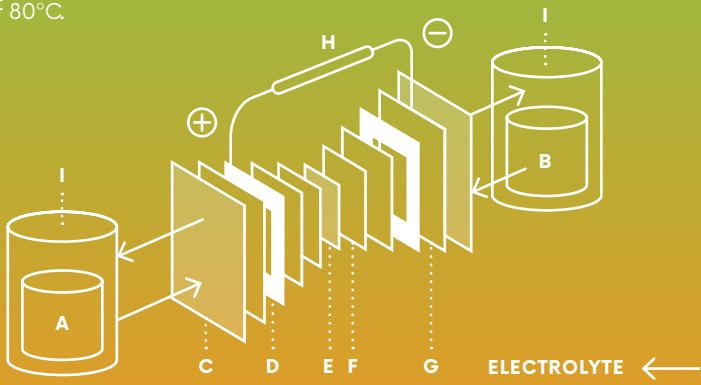
WITHOUT THE NEED FOR A COOLING SYSTEM, THIS INNOVATION ALLOWS THE BATTERY TO BE UP TO 20% MORE ENERGY EFFICIENT THAN EXISTING ORGANIC REDOX FLOW BATTERIES

## A BATTERY TO ENABLE A LOW-CARBON ECONOMY

With electrification being one of the main pathways to decarbonisation, batteries have a key role to play. At every moment, the consumption of electricity must be matched with the generation of electricity, which becomes difficult with non-continuous renewable sources. Batteries are therefore crucial to store energy when available and release it into the electrical grid when not.

## MAIN INNOVATIONS

Redox flow batteries are designed to work at temperature of up to 40°C, however, using the battery generates heat. Under certain circumstances, a cooling system is required to avoid electrolyte degradation or battery malfunction. Cooling requires energy and reduces the battery global efficiency. That is why our battery will be developed to work up to temperatures of 80°C.



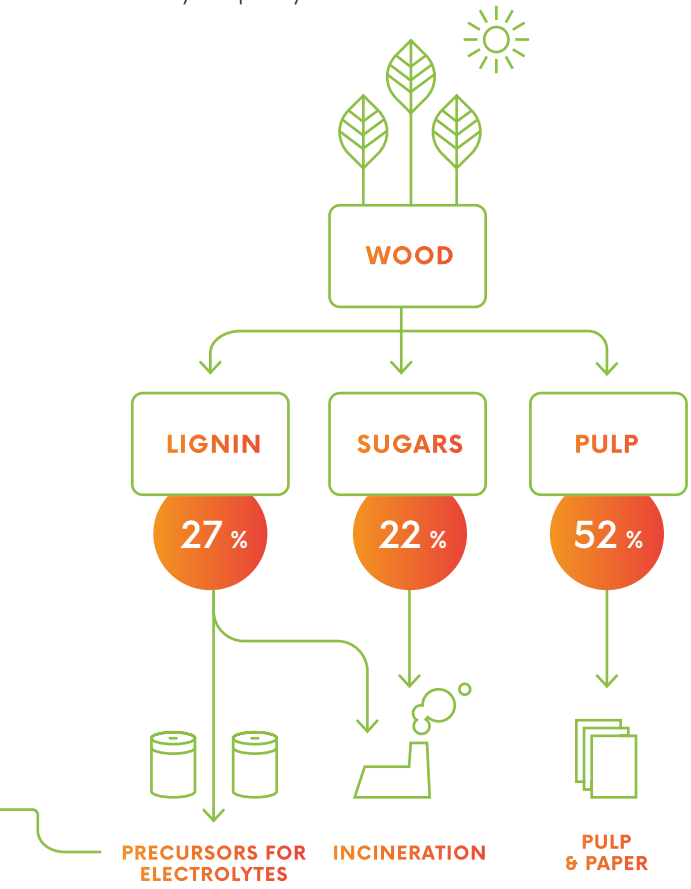

**-A-** Catholyte **-B-** Anolyte **-C-** Cell frame **-D-** Thermal resistance plastic flow frames **-E-** Thin membranes technologystable up 80°C **-F-** High perfomance carbon based electrodes **-G-** Current connector **-H-** Battery Management System for warm environments **-I-** Flexible tanks for easy integration in renewables production facilities.

## A BATTERY MADE OF ORGANIC ELECTROLYTES AND INFLATABLE TANKS

Redox flow batteries are made up of two tanks filled with electrolyte-fluids. When circulated through two half-cells separated by a membrane, the electrochemical reactions for charging or discharging takes place.

Unlike other redox flow batteries, our organic RFB will use electrolytes that can be made out of intermediate products which can be obtained out of lignin. Lignin is a natural and renewable raw material and is available in sufficient amounts from existing pulp production.

In addition, our tanks will be double wall flexible containers with unlimited and modular size which will permit upscaling the battery's capacity.



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