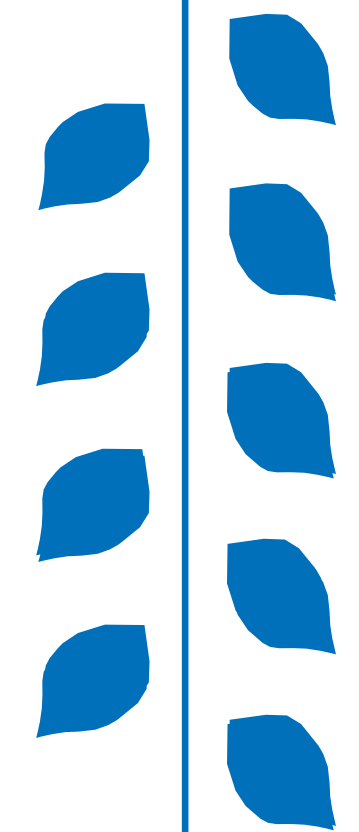
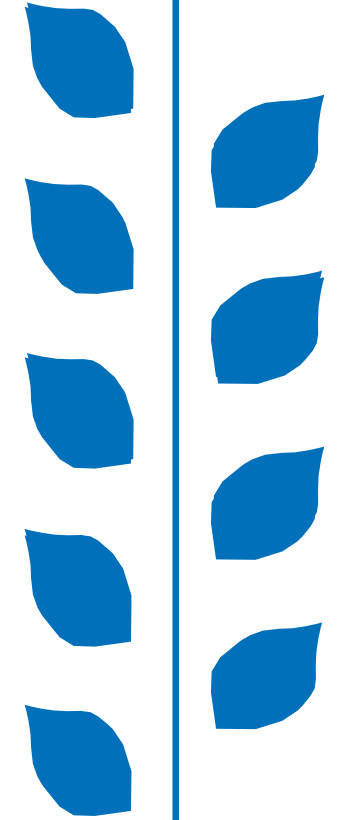
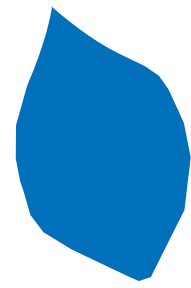
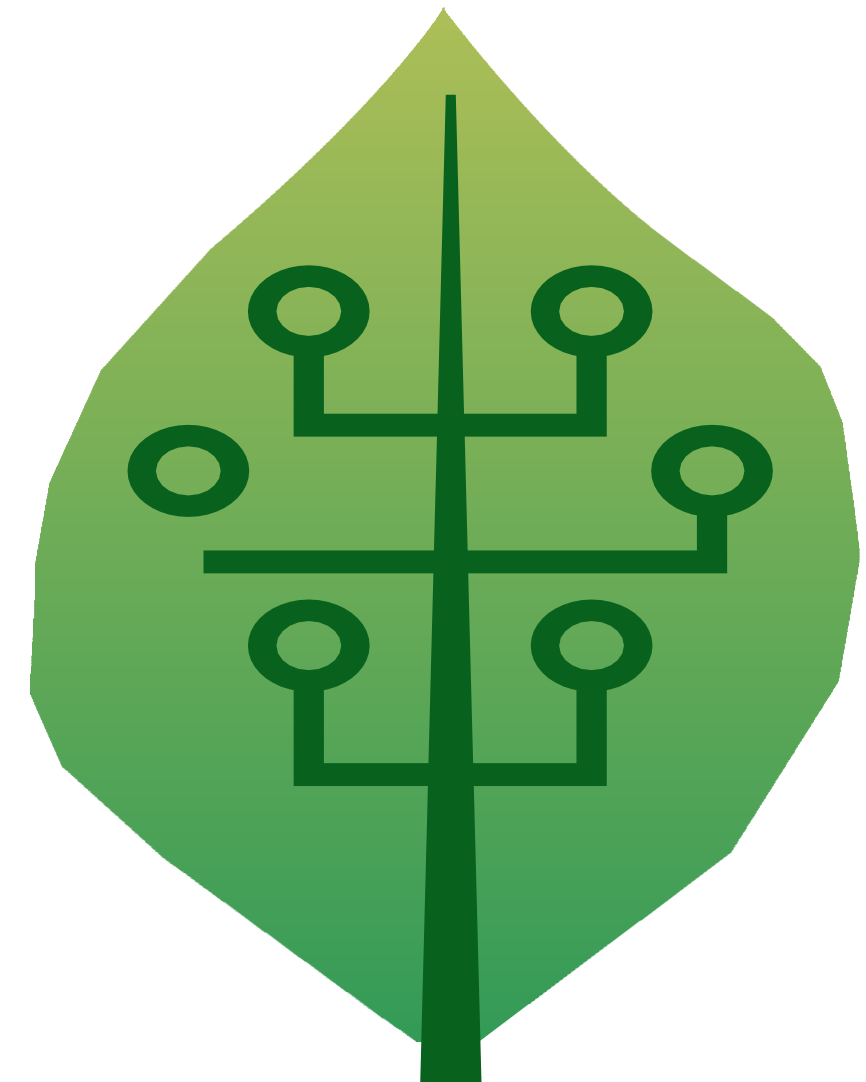


High Energy Batteries

Safe, Cost-Effective & Recyclable



Current landscape in Battery Technology

Type	Power	Range (miles)	Cost/ mile (£)	Technology Ready?	Major Problems	gCO ₂ /Km	Notes
Petrol/Diesel Refuelable	OK	450	0.17	Now	CO ₂ / Pollution/ Divestment	160	Oil industry fading
Lithium Ion Rechargeable	OK	100	0.50	Now	Fire, 6 hrs recharge	157	Poor sales, 2 year life, recharged from Oil/gas/coal
Lithium-Air Rechargeable	OK	3-400*	?	No > 10 yrs	Technically v. difficult, 6 hrs recharge	157	Experimental* recharged from Oil/gas/coal
Fuel Cells Refuelable	OK	300	0.18	Now	\$MultiBn Hydrogen infrastructure Required	88	Oil industry fading. (Main source of H ₂)



Metalectrique Changes the Game.

Metalectrique have developed an advanced chemistry for aluminium air batteries which can be used to power EVs safely and economically.

The chemistry was independently verified in France at Polytech Nantes in 2007 but the potential range for aluminium air batteries was not demonstrated in bench tests until 2013.

The current level of technological development combined with a supportive policy and commercial environment means that the time is right for Metalectrique to ramp up aluminium air batteries for global use.

The new landscape in Battery Technology.

Type	Power	Range (Miles)	Cost / Mile (£)	Technology Ready?	Major Problems	gCO ₂ /Km	Notes
Aluminium - Air Refuelable	OK	1500	0.06	Now	Ramp up to global use	0	Aluminium industry can support

Metaelectrique's Technology Breakthrough.

Metaelectrique's advanced chemistry unlocks aluminium air battery technology:

- Increases cell voltage by 300mV (Figure 4).
- Allows the use of low purity aluminium.
- Limits the Hydrogen side reaction, gel formation & heat generation.
- Allows steady, long-duration power.
- Enables ordinary Aluminium to reach current densities of 180mA/cm² [Figure 5]
- Allows overall battery energy densities >1350Wh/kg
- Removes the need for a recharging infrastructure

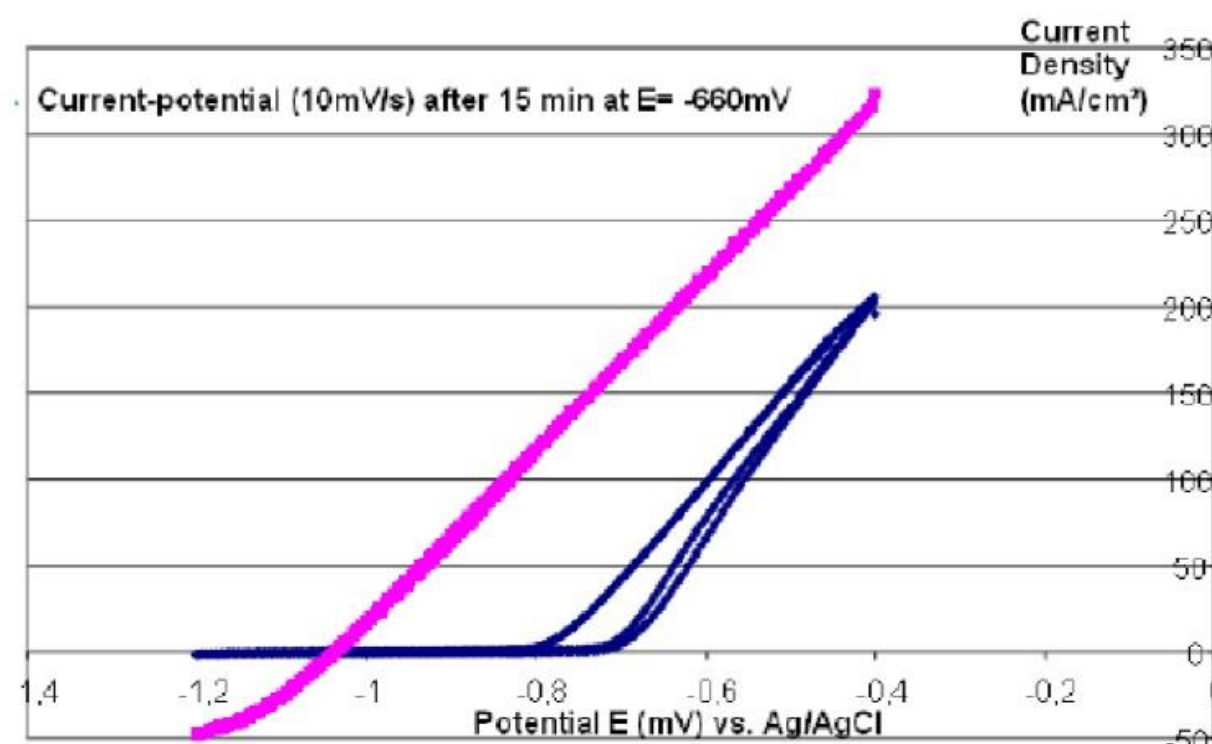


Figure 4. Metaelectrique Electrolyte (pink line) increases cell voltage by 300mV

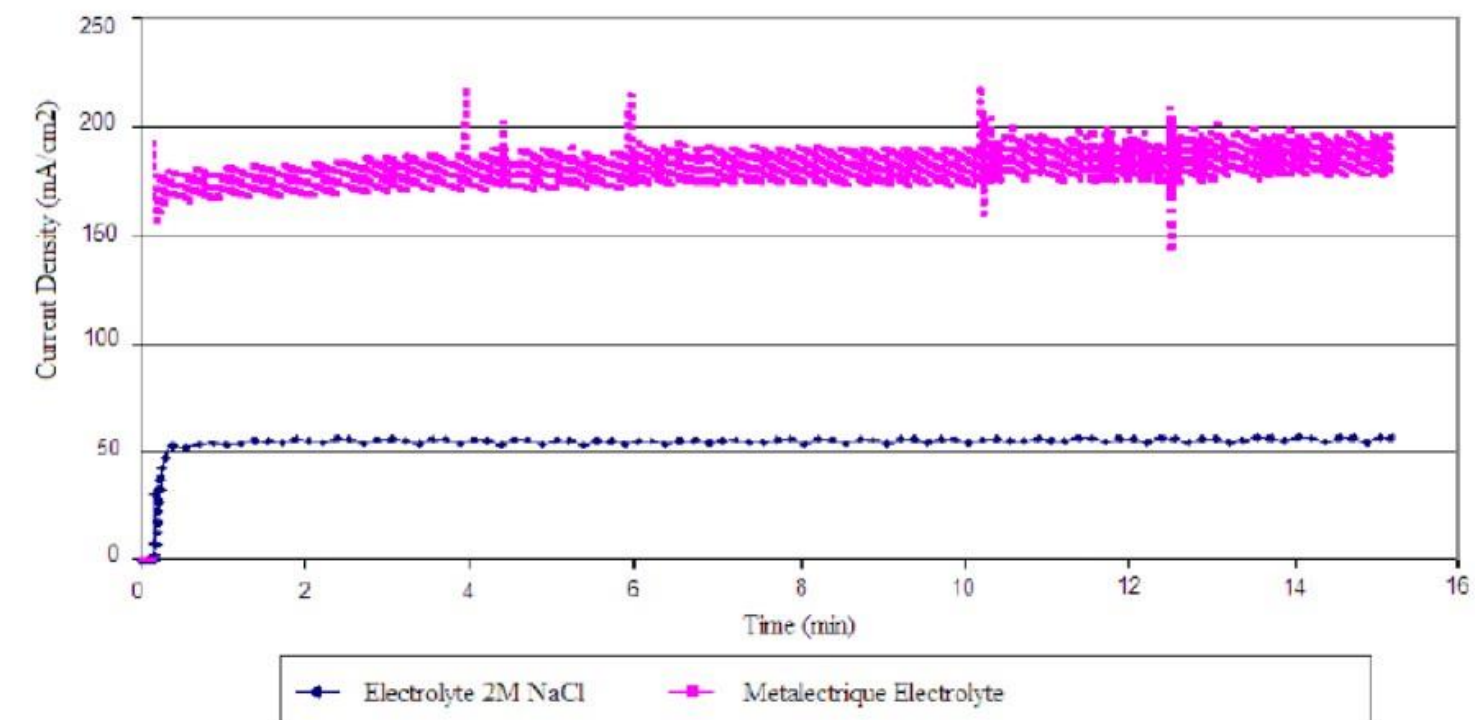


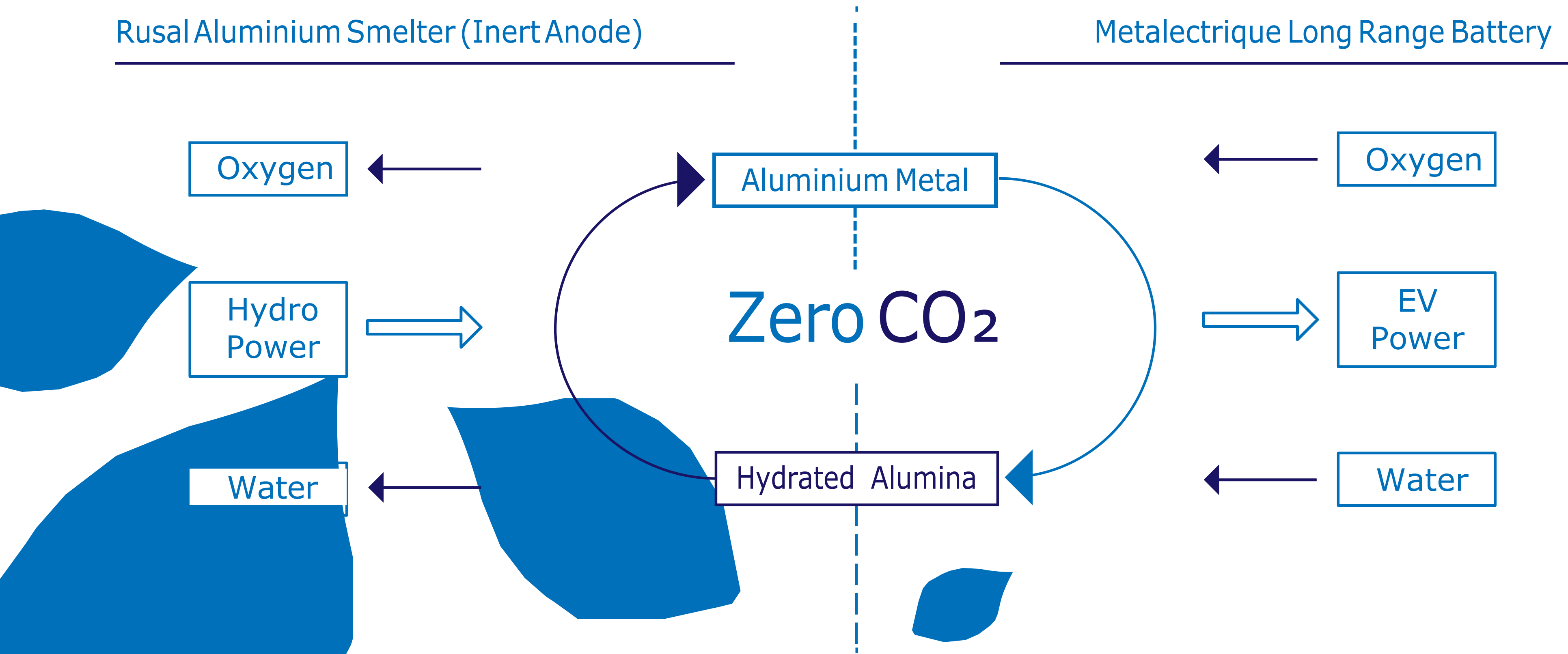
Figure 5. Metaelectrique Electrolyte (pink line) produces steady long-duration power

Delivering CO₂ - Free Driving.



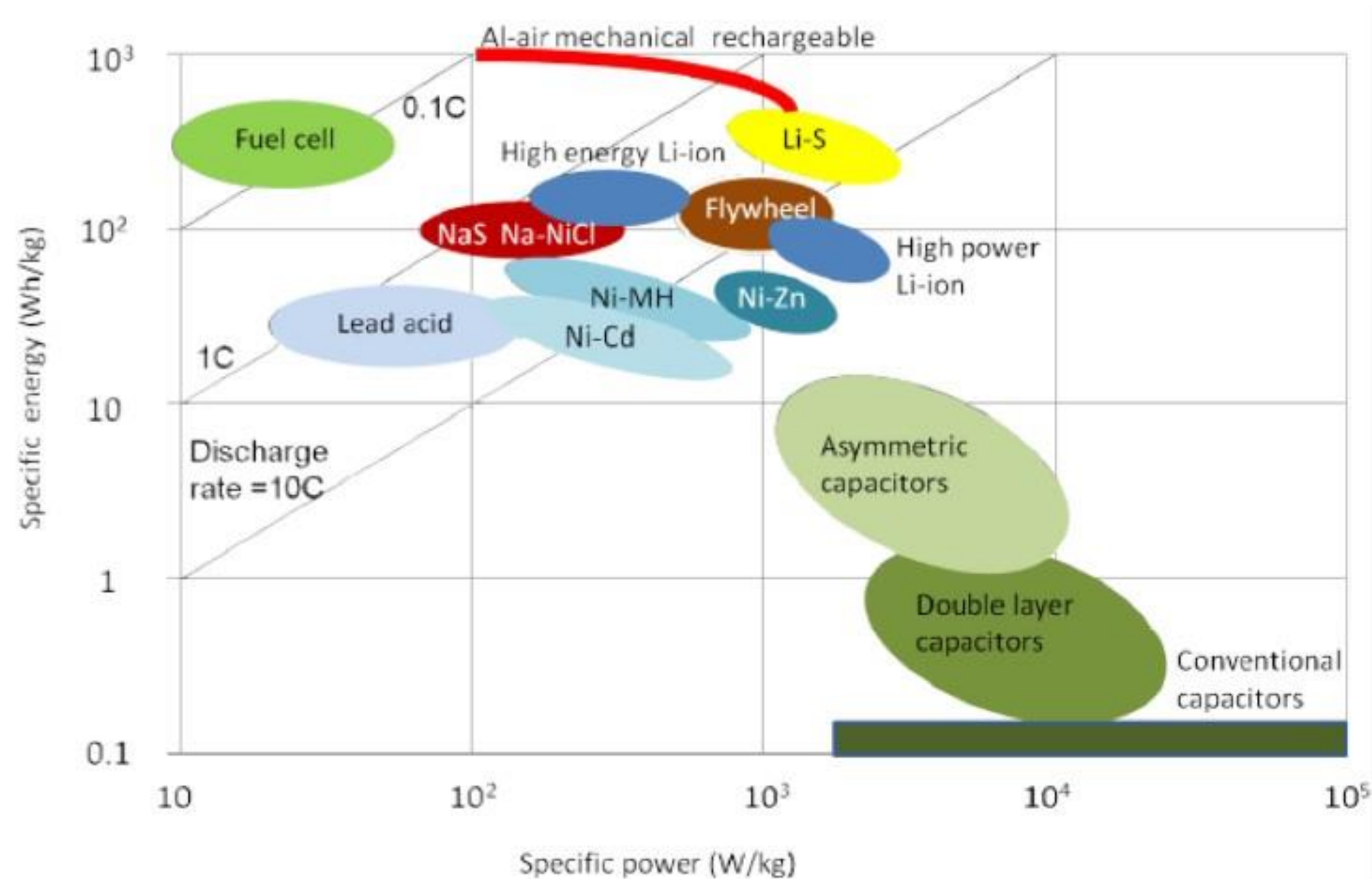
Rusal Aluminium Smelter (Inert Anode)

Metalectrique Long Range Battery

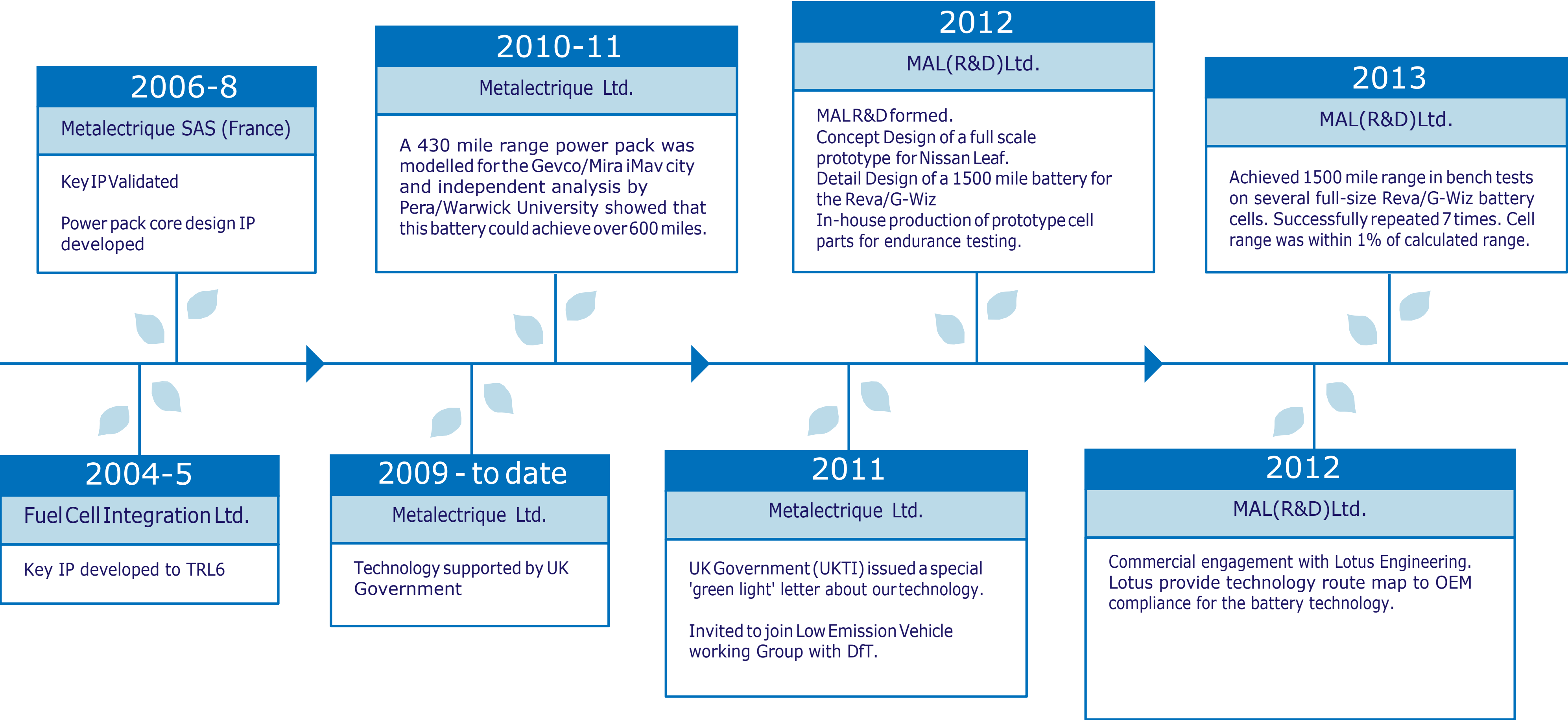


How Does it Compare?

Aluminium-Air technology is superior to any other existing technology in terms of both power and range.



The Metalectrique Story so Far.



Commercial Deployment.

AI-air technology is now proven and the major barriers to commercial viability have been overcome through the development of recyclable and refuelable models.

Automotive Battery Development.

Designs produced in the MAL(R&D)Ltd/Lotus Product Definition Workshop were subjected to a rigorous three-month test programme. This concluded with seven repeat tests on the G-Wiz prototype cells and each test showed steady delivery of power for a range of 1500 miles. This range will be demonstrated in a MEGA Multitruck in 2017.



Military Battery Development.

MAL(R&D)Ltd completed a prototype BA5590 Type battery which is recyclable and refuelable. The MAL-R0117 will be entering production in 2017.



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