



The alkaline Al/hydrogen peroxide semi fuel cell – possible improvements for a system with clear electrolyte:

Present level 100Wh/kg based on total system weight

- **Increase hydrogen peroxide concentration from 50% to 70 %
=> +10 % in energy density**
- **Improve cathode catalyst
=> higher cell voltage, +10% in energy density**
- **Switch from constant volume to constant mass for the system
=> +5 to +10 % in energy density**
- **Decrease the sum of $[O_2] + [H_2O^-]$ in the electrolyte
=> reduce Al corrosion and the consumption of hydrogen peroxide,
+10% in ED**

SUM 130Wh/kg

(Operated as a primary battery, allowing precipitation of aluminium hydroxide, the ED of the energy density "as is" is approximately 200 Wh/kg)