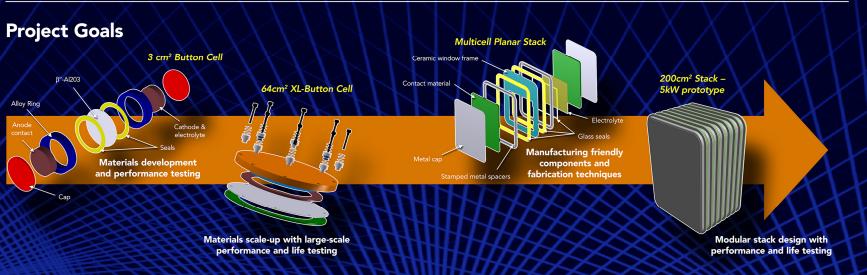
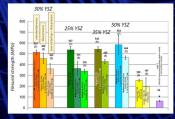
# Planar Sodium-Beta Batteries



- ightharpoonup 3 year program to scale up and demonstrate high cycle life and efficiency of Na-eta battery technology in planar format
- Decrease capital cost by moving to high volume planar manufacturing. Planar technology has higher volumetric packing density than tubular architecture
- » Increase cycle life by reduced temperature operation ideal for grid-scale storage

### **Recent Accomplishments**



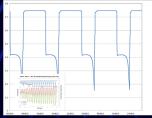
BASE ( $\beta''$  electrolyte) flexural strength as function of processing



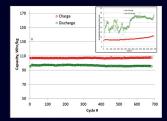
200cm<sup>2</sup> Brazed Cell Design



200 cm $^2$  & 64 cm $^2$  Planar Na- $\beta$  Cell Test Fixtures



200 cm² cell – cycling @ 200 Whr/kg at C/4 - 280°



64 cm<sup>2</sup> cell - capacity and resistance data 100 Whr/kg at 1C - 280°C for over 700 cycles



EaglePicher Power Pyramid™ Demonstration/test system

## Eagle Picher Technologies, LLC

#### **EaglePicher Technologies**

is teaming with Pacific
Northwest National
Laboratory to develop the
next-generation sodium-beta
batteries for the nation's
large-scale energy storage
needs. The outcome will
have direct impact on
establishing U.S. leadership
in stationary storage, and will
demonstrate a competitive
path to cost effective
electrical energy storage. For
more information, contact:

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