I will introduce new developments in hybrid anion- and cation-redox (HACR) cathodes [1,2], high Coulombic efficiency liquid electrolytes [3,4], and metallic foil anodes [5,6]. Efforts connecting to real engineering challenges (prelithiation techniques, electrode compressed density, lean electrolyte, and full cell design) are discussed, and issues related to battery management system, safety and recycling for grid-scale electrochemical energy storage will be discussed.