The dismounted individual infantryman is often required to operate with only the gear and supplies that can be carried. This includes electronic gear such as radios, navigation aids, night vision optics, and rifle scopes. The power and energy to support this gear for longer missions (over 2 days) often results in a significant number of spare batteries carried by the warfighter.

The Office of Naval Research (ONR), under the enabling capability – "Lighten the Load of Dismounted Combatants", has sponsored the Squad Electric Power Network (SEPN) Project to investigate the feasibility of implementing a personally wearable power management and distribution system. The intent of this system is to reduce the quantity and weight of carried spare batteries by the foot-mobile warfighter by removing incompatibility among battery types, provide a state of charge indication, and interface with energy harvesting technologies. Engineers at the Naval Surface Warfare Center Dahlgren Division (NSWCDD) are evaluating prototype Personal Power Strip (PPS) systems that will manage, distribute, and sustain electrical power and energy through a central or shared power source to the gear commonly worn/carried by a United States Marine Corps (USMC) rifle squad member. Technical considerations and engineering tradeoffs arise from optimizing system functionality, form-factor, wearable fit/integration onto the warfighter, and cost. SEPN has performed electrical performance lab testing and gathered human factors input from Marines to inform prototype design optimization. SEPN background, power needs characterization, and PPS engineering approach are presented as lessons-learned for the continuing effort of providing sustainable electric power to the individual warfighter.