

Appendix A. USABC EV Performance Targets

USABC Goals for Advanced Batteries for Light Duty Electric Vehicles (EVs)

| End of Life Characteristics at 30°C | Units | EV Cell Level |
|---|---------|------------------------------|
| Peak Discharge Power Density 30 s Pulse | W/L | 1500 |
| Peak Specific Discharge Power, 30 s Pulse | W/kg | 700 |
| Peak Specific Regen Power, 10 s Pulse | W/kg | 300 |
| Useable Energy (U.E.) Density ¹ | Wh/L | 700 |
| Useable Specific Energy | Wh/kg | 300 |
| Calendar Life | Years | 15 |
| DST Cycle Life | Cycles | 1000 (100% Fast Charge) |
| Cost @ 250k Units ² | \$/kWh | 60 ³ |
| Fast Charge at 30°C (80% U.E. Target ⁴) | Minutes | 10 min |
| Fast Charge at -10°C (80% U.E. Target) | Minutes | 30 min |
| Unassisted Operating at -20°C | % | >70% Specific Useable Energy |
| Operating Environment | °C | -30° to +65° |
| Survival Temperature Range, 24 Hr. | °C | -40° to +75° |
| Minimum operating Voltage | V | >0.55V _{max} |
| Maximum Self-discharge | %/month | <1 |

1. The definition of usable energy (U.E.) can be found in the “USABC Battery Test Manual for Electric Vehicles” on USABC website.
2. 100kWh/pack is assumed.
3. The cost calculation should be based on US production.
4. The definition of usable energy (U.E.) target can be found in the “USABC Battery Test Manual for Electric vehicles” on USABC website.