Table 9 - Energy Storage Capabilities

Technologies	Advantages	Disadvantages	Major Applications	Power*	Energy**
Pumped Storage	High Capacity, Low Cost	Special Site Requirement	Energy Time Shift, Frequency regulation, Ancillary Services		Fully Capable
Compressed Air Storage (CAES)	High Capacity, Low Cost	Special Site Requirement Need Gas Fuel	Energy Time Shift, Frequency Regulation, Ancillary Services		Fully Capable
Flow Batteries: VRB, ZnBr	High Capacity, Independent Power/Energy Ratings	Low Energy Density	Peak Shaving for T&D upgrade deferral, Load Leveling, Backup Power	Reasonable for this Application	Fully Capable
NaS	High Power & Energy Densities, High Efficiency	Production Cost, Safety Concerns	Peak Shaving for T&D upgrade deferral, energy time shift, load leveling , voltage control, reactive power	Fully Capable	Fully Capable
Li-ion	High Power & Energy Densities, High Efficiency	High Production Cost, Special Charging Circuit	Consumer Electronics, PEV, PHEV, Utility Applications	Fully Capable	Feasible but not yet economical
Ni-Cd	High Power & Energy Densities , Efficiency		Utility/Telecom backup, Consumer Electronics	Fully Capable	Reasonable for this Application
Lead-Acid	Low Capital Cost	Limited Life Cycle	Automobile, UPS Telecom, Substation Reserve Power	Fully Capable	Feasible but not yet economical
Flywheels	High Power	Low Energy Density	Frequency Regulation, Power Quality, Emergency Bridging Power, Fluctuation	Fully Capable	Feasible but not yet economical
SMES	High Power	Low Energy Density, High Production Cost	Power Quality, Emergency Bridging Power	Fully Capable	
Electrochemical (EC) Capacitors	Long Life Cycle, High Efficiency	Low Energy Density	Power Quality, Emergency Bridging Power, Fluctuation	Fully Capable	Reasonable for this Application

* Stored energy suitable for short duration, high precision power quality and continuity of service when switching from one energy source to another.

** Stored energy suitable for decoupling the timing of generation and consumption of energy.