

TECHNOLOGY DEVELOPMENT PROJECT FACT SHEET

SP015: Carol Spring Mountain Remote Solar System

Since 1985, APS' customers atop Carol Spring Mountain were served via a 60 kW and a 55 kW diesel generator. The generators consumed 11,000 gallons of diesel fuel per year that had to be delivered by truck up the mountain. During winter months this was often difficult and several small fuel spills were a constant reminder of the possibility of a potentially larger environmental accident. Fuel consumption and the associated spill risk were substantially reduced in 1995

when APS constructed Arizona's then largest remote solar hybrid power plant to serve the Carol Spring Mountain customers. The hybrid system consists of 25 kW of fixed photovoltaic panels, 600 kWh of sealed VRLA (Valve Regulated Lead Acid) batteries and a 50 kW diesel backup generator. The system has provided reliable electric service for over 8 years and was the forerunner of a number of other solar hybrid power plants that have been constructed by APS.



Location: 15 Miles Northeast of Globe, Arizona

Solar PV Plant Rating:	25,600 DC
Annual Solar Generation	54,297 kWh
Module Manufacturer:	ASEA (ASE-Americas)
Quantity of Modules:	90 at 285 Watts DC each
Tracking:	Fixed at Latitude (34 degrees) South Facing
Inverter Manufacturer:	AES (Advanced Energy Systems)
Inverter Rating	30 kW
Quantity of Inverters:	1
Storage Battery:	600 kWh
Back-up Diesel Generator	50 kW AC

Estimated emissions avoided as a result of operating this solar power plant instead of the diesel generators:

CO2	71,000 lb/yr
SOx	143 lb/yr
NOx	175 lb/yr
Particulates	10 lb/yr



For more information contact Janet Crow at 602-250-4990 or janet.crow@aps.com

