

Accurate economic analysis of photovoltaic (PV) systems performance over the system lifetime requires knowledge of the performance of the PV system as the module and balance of system components age. Accelerated testing and experience with systems install 20 to 30 years ago show that PV modules will work over long periods. Nine years of PV data at Ashland, Oregon are used to determine the degradation in performance at the Ashland site. Three systems at the AEC PV Test Facility are used to study the degradation in performance over a two year period. All the systems have a degradation rate between 0.6 and 1.5% per year. It is determined that with good measurements a degradation rate of one percent can be observed over a two year period. It is unlikely that small rates of degradation can be determined accurately over one year. The accuracy of the rate determined can be improved with high precision irradiance and meteorological measurements.