When Figure 21.1 was defined, inflation was not mentioned, and the cash flows shown for the electricity value were constant over a number of years. Such a problem statement is consistent with a "real dollar" or "constant worth dollar" or just "constant dollar" approach. In this view, all monetary values are stated in terms of their purchasing power at the point in time at which the present worth of the system will be calculated. The computation of the present worth is a little simpler for a constant-dollar formulation, but that approach can mask some real-world inflationary effects. For example, the inflation of avoided electricity prices may be different from the inflation of labor required for maintenance or components used in replacing failed modules. When explicitly taking inflation into account, the monetary amounts in the cash flows are stated in terms of the actual dollar transactions at the time at which they occur. These amounts are called *actual dollars, then-current dollars*, or just *current dollars*.

Since the calculation of present worth measures is usually carried out for the purpose of comparing system alternatives, it can be argued that useful comparisons can be made in either constant-dollar or current-dollar terms. Where the differences in system measures turn out to be relatively large, that argument is likely to be valid, because the difference in the systems is obvious. However, there may be instances in which the outcome could be skewed if inflation is not properly calculated.

Thus far, the discussion has assumed present worth calculations either on a constant-dollar basis or on a current-dollar basis with inflation at a constant rate. It is also possible that a constant inflation rate does not adequately represent the future. If the inflation rate (or the discount rate) varies over the period of the analysis, then, practically speaking, one is forced to calculate separately the present worth of each future cash transaction and add the terms to get a system present worth.

It needs to be emphasized here that the computation of a present-worth measure for some energy alternatives requires the projection of cash flows (transactions) up to 30 years into the future, and thus the result depends not just on the proper application of computational methods, but on the assumptions and information that go into this projection. The cash flows to be projected include energy prices, materials costs, labor costs, cost of capital, and related factors. This requirement often leads to the parameterization of critical factors and economic analysis under a range of scenarios rather than a single set of assumptions. Fortunately, the effect of the discount rate is to reduce the impact of projections far into the future relative to those in the near term.

Now, let us consider a more general statement of cash flow that supports the definition of additional economic measures of PV systems. The statement assumes that a PV system will be purchased, installed, and operated over a period of years by a profit-making organization. For a given year, n, the net cash flow based on returns to equity capital is [2]

$$X_n = (R_n - C_n - I_n) - (R_n - C_n - I_n - D_n)T - K_n + S_n + B_n - P_n \pm W_n \qquad (21.9)$$

The terms of equation (21.9) are as follows.

$R_n =$ gross revenue due to the system in the year n; typically the value of the electricity generated.