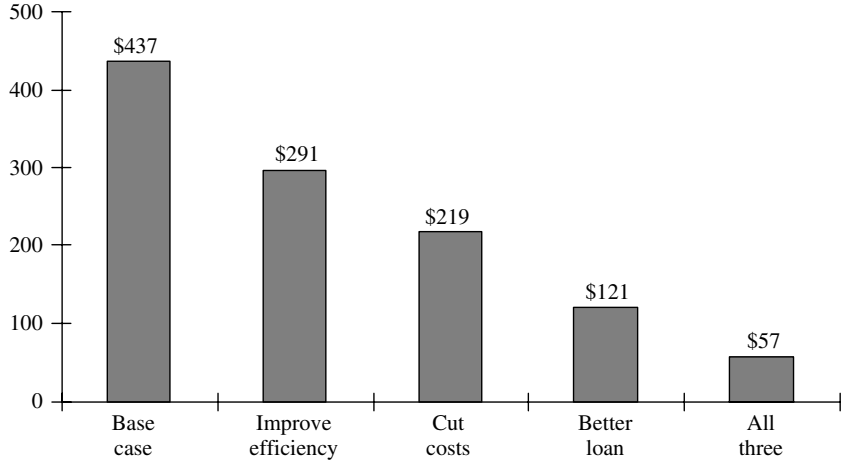

Figure 24.3 Monthly payments on a 2.5 kW residential PV system

efficiency of 10%. In the base case, financing is assumed to be a 7-year 18% loan, resulting in a monthly payment of $437. Then, three improvements are evaluated (see Reference [24]):

Research programs to improve efficiency: By improving the efficiency of the system, its size can be reduced while still generating the same output, thus reducing the cost. For a 50% increase in system efficiency, from 10 to 15%, the monthly payment will be reduced to $291 per month. However, it may take ten years or more before technology research can achieve these results in commercial products.

Cost reduction through manufacturing scale-up: By scaling up manufacturing, automating factories, and generally reducing the production cost per unit, total system costs can be reduced. Assuming a 50% reduction in system cost, from $8.00/Wac to $4.00/Wac, the monthly payment of the system can be reduced to $219 per month. Achieving this result might take approximately five years, as new factories are planned, built, and put into operation.

Better financing: A third way of reducing monthly payments is by applying lower-cost, longer-term financing. Here, the 7-year, 18% loan is replaced with a 30-year, 6% loan. Monthly payments come down to $121 per month, due to the change in financing alone, and this can be done immediately.

All three initiatives: The best public policy will be to accomplish all three cost reductions, but the immediate impact of lower-cost, longer-term financing is apparent.

As shown above, the provision of lower-cost, longer-term financing can have a more immediate impact on the affordability of solar PV systems than research and manufacturing programs, and will probably be the catalyst that creates the jump in demand that, in turn, causes photovoltaics to drive down the learning curve. Thus, financing may be the element that will break photovoltaics out of its long-standing "chicken and egg" dilemma.