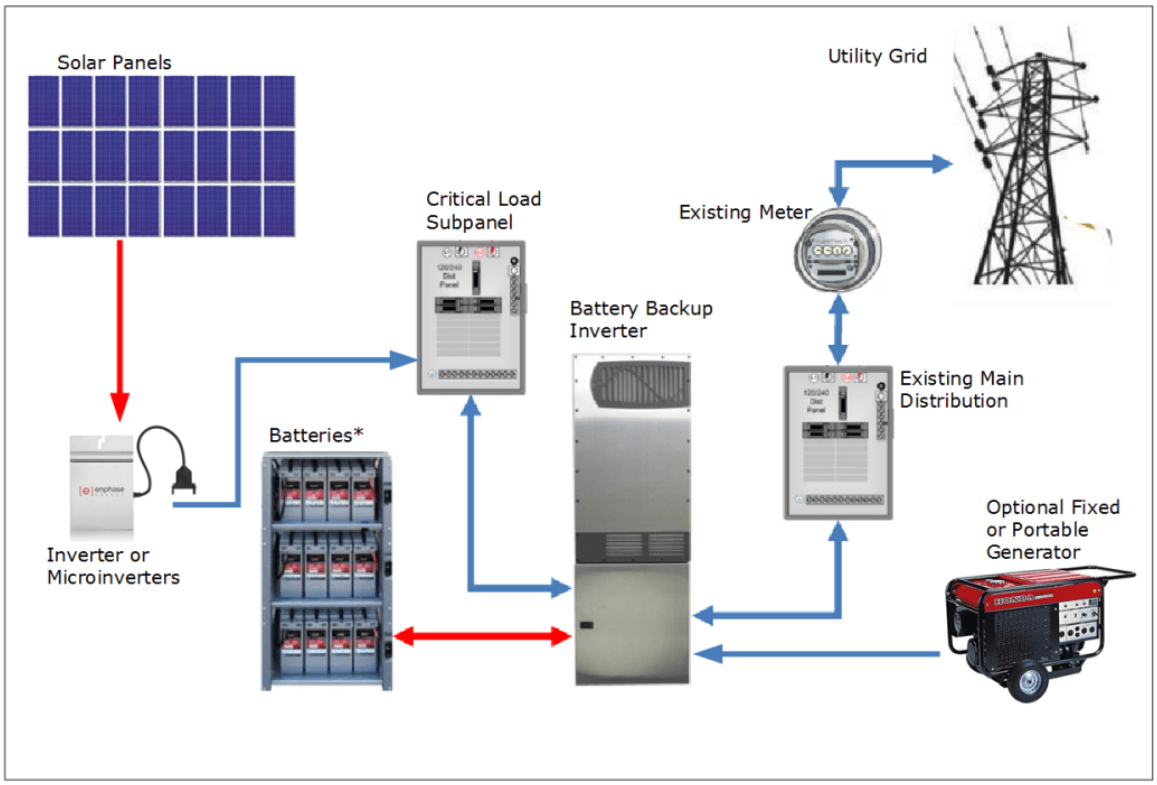
Salmerón Solar Systems LLC

With 50 packaged small scale photovoltaic systems leased to industrial operators, Toni Salmerón is offering her US based solar leasing company for sale at a price of $1,000,000 at the beginning of the first year of operations. Toni wants you to develop a three-year economic analysis to assist buyers in evaluating the company.



The company's property taxes are $35,000 per year and are expected to grow at an annual rate of 4%. Toni currently spends $4,800 per year per system to maintain and administer the fleet. Administrative and maintenance costs are expected to increase by 7 percent per year.

Currently, Toni leases her systems for $1,000 per month each. About 60 percent of the systems are leased each month. Toni believes demand for her systems is highly elastic. Her experiments indicate that the percentage of the fleet leased each month increases by 7 percent for each $100 per system per month reduction in the lease price. For example, at $600 per month, she expects that 88 percent of her systems would be rented. She also believes lease prices can be increased 9 percent in years two and three without affecting the fleet lease percentage established during the first year.

At the end of three years, Toni assumes the buyer will resell the business for three times the revenue earned in year three. Until the end of the third year, the fleet will remain constant and no systems will be bought or sold.

Define cash flow as revenue minus expenses, and ignore depreciation and income taxes. Assume that cash flow in year three includes the proceeds from the sale of the business at the end of the year and that year one's cash flow includes the purchase price at the beginning of the year. Define overall investment profit as the net present value of the cash flows over the forecast horizon, assuming a discount rate of 10%.

Questions:

1. Construct an influence diagram for your analysis, labeling the decision variables, the key parameters, and the performance measures.

2. Use your diagram to construct an Excel spreadsheet. Label the cells containing the key problem parameters and constants. Try to avoid embedding any constants into your formulae. Instead, construct formulae that refer to the cells where the constants are located.

3. Use a data table to determine the initial system lease price that achieves the highest overall investment performance.

4. How sensitive is overall investment profit to the following parameters: purchase price, annual maintenance cost/system, annual property taxes, and lease price growth rate? Try varying each parameter by +/- 20 percent, using the initial lease price determined for question 3.