

## SunDancer - Economics

1. Now that you know how SunDancer works, let's get into money.
2. Currently available solar and wind power equipment, even with subsidies, is simply too expensive to be widely acceptable. In my research, here is what I learned.
  - a. A 5 KW system had a cost of \$17,350. I had to put 10% down which was \$1,735 plus pay the installation, which was estimated at \$2,500. So I had a cash investment of \$4,235.
  - b. The balance of \$15,615 would have been financed over 6 years. The monthly payments would have been right at \$250 per month for 6 years.
  - c. What would the solar system have saved me? Well 5 KW for an average of 8 hours a, 30 days per month would have been 1,200 kilowatt hours of power. Some months would have been more but others would have been less. The 1200 kilowatt hours of power generated would have cut my power bill by about \$150 per month. That is how much a 5KW system would save on my power bill.
  - d. So I would have had a cash investment of over 4 grand, would have had a monthly payment of \$250 and a monthly savings of \$150. I would have been going backwards \$100 per month to start with. In other words, each month, my payment was going to be \$100 more than my savings.
  - e. Power rates go up at about 3% per year so at the end of the 6 years, I would have been getting about \$170 per month in savings on my power bill which means that by then I would have been going backwards by only \$80 per month.
  - f. Beyond the upfront costs, you have to consider maintenance. For example, battery life for a system outdoors like this is about 4 years max. Inverters in a non-temperature controlled space have a life of about 3-4 years. Replacing a battery, with labor is about \$500. An inverter is about \$900. Assuming that they last 4 years, that is a maintenance cost of \$350 per year or about \$30 per month that has to be factored in. So actually, during the 6 years, including maintenance, I would have been going backwards an average of \$120 per month.
  - g. So what does all this mean? It means that in addition to my original investment of \$4,235, I would have had an additional cash investment of \$8,640 over the next 6 years, for a total of \$12,875 cash invested. At that point I would have owned the system for 6 years, and still been upside down \$12,875. But at least at that point the system would have been paid for.

- h. So then I would still have the maintenance costs, but my monthly saving after those costs were deducted would have been about \$140 per month. It would have taken me an additional 6 years of savings to break even, twelve years all together.
    - i. Currently, it is just not a good investment.
- 3. But what if the market for electric power were to shift in favor of self-generation because it was a lot cheaper to make your own power than to buy it from the power company. Then economics begins to work for the environment instead of against it.
- 4. So that is the question for us to answer here. Can consumers save enough money to justify buying SunDancer? Until we actually have a fully operational prototype it is not possible to say with precision what SunDancer will end up costing, but it is possible to make a ball park projection.
- 5. There are two configurations in which we plan to sell SunDancer
  - a. cogeneration
  - b. off grid.
- 6. Let's consider Co-generation.
  - a. average 13 cent per kilowatt hour
  - b. 75% buy-back rate equals out to 9.75 cents per KH
  - c. Home with 200 watt electric service
    - i. 48 KW Go-Gen system
    - ii. \$30,000 retail
    - iii. \$4,000 install
    - iv. 10% down payment - investment of \$7,000
    - v. \$340 monthly payment
    - vi. 48 KW system operating 24/7 for 30 days will produce 34,560 KH of power
    - vii. If sold at 9.75 cents per KH, money from power company will be \$3,370
- 7. Let's consider Off-Grid.
  - a. array is 1/4 the size of the Go-Generation
  - b. 48 KW off-grid system
    - i. \$18,000 retail estimate
    - ii. 5% for 8 years with a monthly payment of \$225
    - iii. replaces a \$325 power bill with \$225 payment
    - iv. After 8 years, you are paid up
    - v. power bills go up and average of 3% per year - \$57,600 over 10 years
    - vi. pay only \$22,000 over 10 years

8. Time will tell whatever time will tell, but I don't think that this will be a hard sell. What do you think? Now you know what we are really shooting for ... the sort of economics that will actually drive change.