

O SOLE MIO SOLAR L.T.D.

Burak BAYINDIRLI

Jaime DIAZ

Josemaria HINOJOSA

Description of the project

- ▣ O Sole Mio Solar Ltd.
- ▣ Photovoltaic Panel Supplier Company
- ▣ Limited Liability
- ▣ The aim of the company is to import PV systems from USA to sell it in Mexico from 1 kw up to 6kw systems to home owners or small scale companies.

Market Analysis

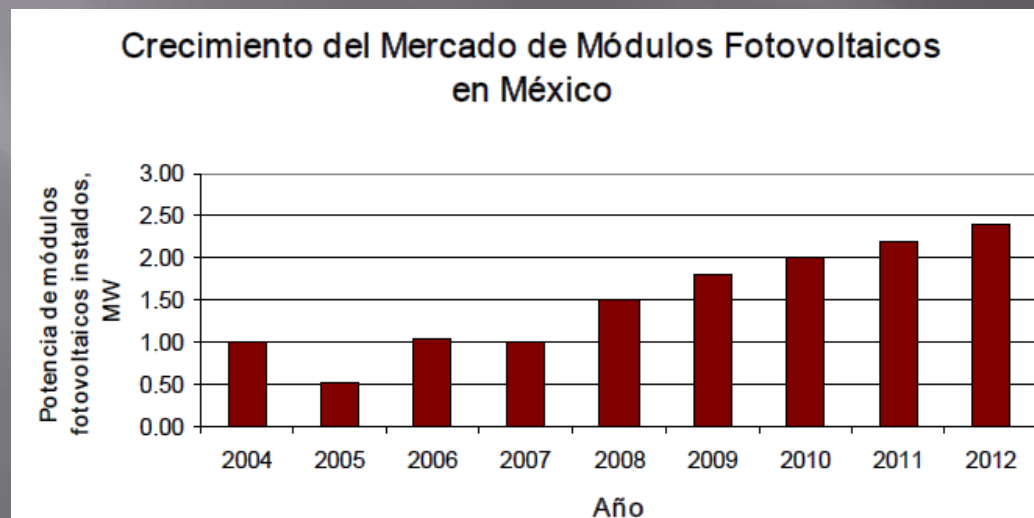
- ▣ Worst case scenario: \$600 million (USD) PV market in Mexico.
- ▣ Prices of Watt changes between 1\$ - 8\$

Overview

- ▣ Mexico is one of the sunniest countries in the world
- ▣ Radiation flux during the year is up to 6.7 kWh/m²
- ▣ Mexico is the 14th biggest economy in the world.
- ▣ Mexico has a new policy to develop energy from renewable sources.

Energy Situation in Mexico

- ▣ 18.5 MW PV installed
- ▣ In the year 2005 legislation changed looking for the public generation of electricity
- ▣ Before that only CFE could generate electricity
- ▣ On the year 2007 great scale projects encouraged by the federal government and the World Bank



Location of the Company

Monterrey



Competitors

- ▣ Solar TE
- ▣ Ahorra Luz
- ▣ Galatek
- ▣ Mogamex
- ▣ Saecsa

60% of the market share

The Company

O Sole Mio Ltd.

3 Founders

Capital requirements \$547,281.00

Liability limited to contributions

Partners

Burak BAYINDIRLI

Jaime DIAZ

Josemaria HINOJOSA

Technology



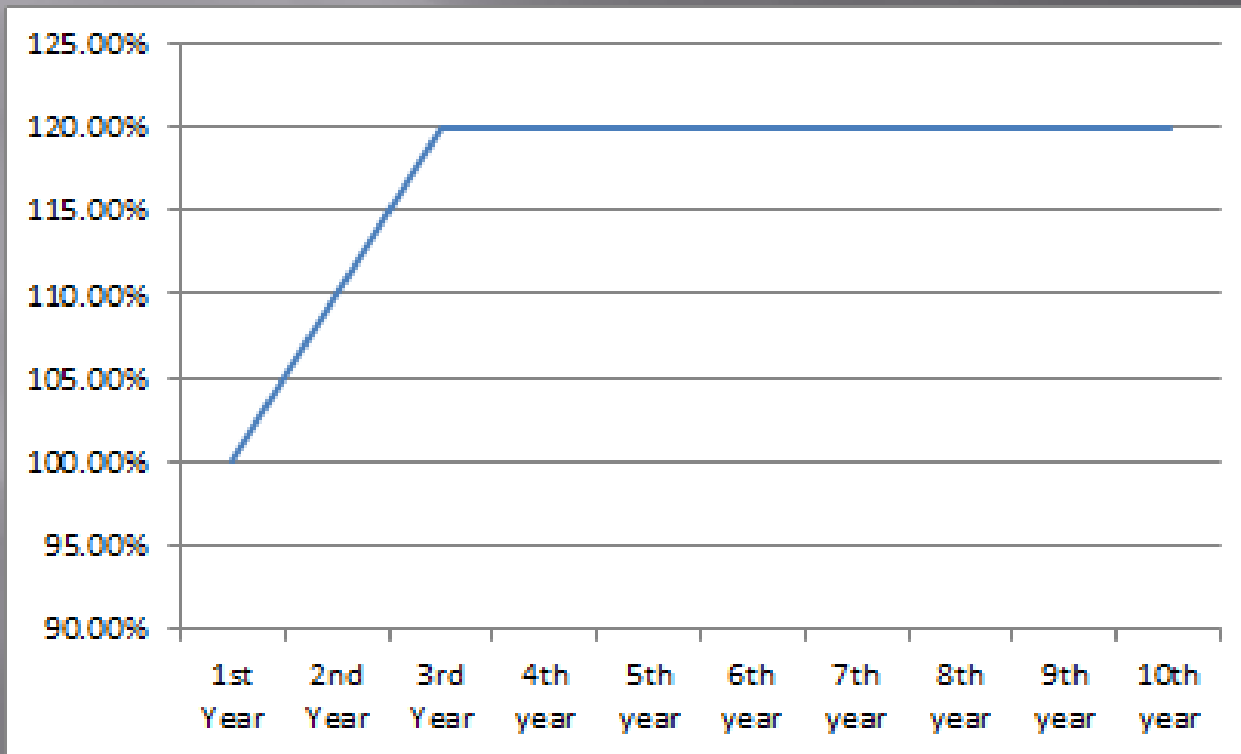
AS Solar
Sonne weitergedacht.



Financial Instruments and Economic Incentives for Energy Investment

- ▣ Laws
- ▣ Loans with 12%
- ▣ Taxes
- ▣ End users also get loans

Sales



Financing

| | | | | |
|-----------------------------------|--------|--------------|---------|---------------|
| Total Investment Financing | | | | |
| Total Investment Financing | | \$547,281.00 | | |
| Own Capital Funds | 40.00% | \$218,912.40 | 12.00% | interest rate |
| Outside Financing | 60.00% | \$328,368.60 | 5 years | running time |

Cost Calculations

Investment Calculation Building

| Investment Calculation Building | Investment Sums | Depreciation (years) | Depreciation | 2nd year |
|--|------------------------|-----------------------------|---------------------|----------------------------|
| Solar Panel Kit (5kW) | \$29,000.00 | 1 | \$29,000.00 | \$0.00 |
| Installation | \$1,500.00 | 1 | \$1,500.00 | \$0.00 |
| | | | | |
| Sum of Building | \$30,500.00 | | \$30,500.00 | \$0.00 |

Investment Calculation Machinery

| Investment Calculation: Machinery | Investment Sums | Depreciation (years) | 1 st year | 2 nd year | 3 rd year |
|-----------------------------------|---------------------|----------------------|----------------------|----------------------|----------------------|
| Storage System/Shelves | \$120,000.00 | 2.85 | \$42,000.00 | \$42,000.00 | \$36,000.00 |
| Crane | \$30,000.00 | 2.85 | \$10,500.00 | \$10,500.00 | \$9,000.00 |
| | | | | | |
| Sum of Machinery | \$150,000.00 | | \$52,500.00 | \$52,500.00 | \$45,000.00 |

Investment Calculation Off-sites Extras

| Investment Calculation: Off-Sites/Extra investment | Investments | Depreciation Years | Depreciation Costs | 2 nd year | 3 rd year | 4 th year | 5th year | 6th year | 7th year | 8th year | 9th year | 10th year |
|--|--------------|--------------------|--------------------|----------------------|----------------------|----------------------|----------|----------|----------|----------|----------|-----------|
| Tools | \$1,000.00 | 2.857142857 | \$350.00 | \$350.00 | \$300.00 | | | | | | | |
| Furniture | \$5,000.00 | 10 | \$500.00 | \$500.00 | \$500.00 | \$500.00 | \$500.00 | \$500.00 | \$500.00 | \$500.00 | \$500.00 | \$500.00 |
| Computer equipment | \$5,000.00 | 3.333333333 | \$1,500.00 | \$1,500.00 | \$1,500.00 | \$500.00 | | | | | | |
| Telephones, faxes, cell phones (Handys) | \$500.00 | 10 | \$50.00 | \$50.00 | \$50.00 | \$50.00 | \$50.00 | \$50.00 | \$50.00 | \$50.00 | \$50.00 | \$50.00 |
| Sum of Off Sites | \$11,500.00 | | \$2,400.00 | \$2,400.00 | \$2,350.00 | \$1,050.00 | \$550.00 | \$550.00 | \$550.00 | \$550.00 | \$550.00 | \$550.00 |
| Sum of 10% offsites | | | | \$550.00 | \$550.00 | \$550.00 | \$550.00 | \$550.00 | \$550.00 | \$550.00 | \$550.00 | \$550.00 |
| Licences | \$1,100.00 | 10 | \$110.00 | \$110.00 | \$110.00 | \$110.00 | \$110.00 | \$110.00 | \$110.00 | \$110.00 | \$110.00 | \$110.00 |
| Sum of Engineering | \$1,100.00 | | \$110.00 | \$110.00 | \$110.00 | \$110.00 | \$110.00 | \$110.00 | \$110.00 | \$110.00 | \$110.00 | \$110.00 |
| Vehicles | | | | | | | | | | | | |
| 4 Sales Cars | \$100,000.00 | 4 | \$25,000.00 | \$25,000.00 | \$25,000.00 | \$25,000.00 | | | | | | |
| Truck | \$15,000.00 | 4 | \$3,750.00 | \$3,750.00 | \$3,750.00 | \$3,750.00 | | | | | | |
| Sum of Vehicles | \$115,000.00 | | \$28,750.00 | \$28,750.00 | \$28,750.00 | \$28,750.00 | | | | | | |

Labour Costs

| Calculation of Labour Costs | Number in the 1 st year | Personnel Direct Costs | 2 nd year | 3 rd year | 4 th year | 5 th year |
|-----------------------------|------------------------------------|------------------------|----------------------|----------------------|----------------------|----------------------|
| Salesmen | 3 | \$26,460.00 | \$35,280.00 | \$44,100.00 | \$44,100.00 | \$44,100.00 |
| Assistant | 1 | \$1,029.00 | \$1,029.00 | \$1,029.00 | \$1,029.00 | \$1,029.00 |
| Accountant | 1 | \$1,470.00 | \$1,470.00 | \$1,470.00 | \$1,470.00 | \$1,470.00 |
| Financial Controller | 1 | \$2,940.00 | \$2,940.00 | \$2,940.00 | \$2,940.00 | \$2,940.00 |
| Financial Assistant | 1 | \$1,029.00 | \$1,029.00 | \$1,029.00 | \$1,029.00 | \$1,029.00 |
| Driver | 1 | \$955.50 | \$955.50 | \$955.50 | \$955.50 | \$955.50 |
| | | | | | | |
| Total Labour Costs | | \$406,602.00 | \$512,442.00 | \$618,282.00 | \$618,282.00 | \$618,282.00 |

Sum of Utilities and Finished Goods

| Calculation of Finished Goods Costs | Specific Price in USD | Quantity to Sell | Sale Target |
|-------------------------------------|-----------------------|---------------------------|-----------------------|
| Raw Materials | | | |
| PV panel 1kW | 5,600.00 | 240 | \$1,344,000.00 |
| PV panel 2kW | 7,600.00 | 120 | \$912,000.00 |
| PV panel 3kW | 11,200.00 | 60 | \$672,000.00 |
| PV panel 4kW | 16,000.00 | 12 | \$192,000.00 |
| PV panel 5kW | 20,000.00 | 12 | \$240,000.00 |
| PV panel 6kW | 23,200.00 | 12 | \$278,400.00 |
| | | | \$3,638,400.00 |
| | | | |
| Inverters | \$125.00 | 456 | \$57,000.00 |
| Cables (per meter) | \$2.00 | 1200 | \$2,400.00 |
| | | | |
| | | | |
| Utilities | | | |
| Rent | \$24,000.00 | | |
| Energy | \$3,600.00 | | |
| Maintenance Costs | \$2,400.00 | | |
| Administrative Overhead Costs | \$0.00 | | |
| Transportation of Goods | \$12,000.00 | | |
| Customs | \$654,912.00 | | |
| Marketing | \$8,000.00 | | |
| Forwarder | \$12,000.00 | | |
| Sum of Utilities | \$716,912.00 | | |
| | \$1,572.18 | | |
| | | | |
| | | Sum of Utilities | \$4,414,712.00 |
| | | and Finished goods | |

Financing

| Calculation of Financing Costs | | | | |
|---------------------------------|-----------------|---------------|---------------------|---------------------|
| Year | Balance of Debt | Interest Rate | Interest Cost Paid | Repayment |
| 1 | \$328,368.60 | 12.00% | \$39,404.23 | \$65,673.72 |
| 2 | \$262,694.88 | | \$31,523.39 | \$65,673.72 |
| 3 | \$197,021.16 | | \$23,642.54 | \$65,673.72 |
| 4 | \$131,347.44 | | \$15,761.69 | \$65,673.72 |
| 5 | \$65,673.72 | | \$7,880.85 | \$65,673.72 |
| | | | | |
| Total Interest Cost Paid | | | \$118,212.70 | |
| Total Repayment | | | | \$328,368.60 |

Self Costs

| Self Costs | Year per solar panel | 1 st Year | 2 nd Year | 3 rd Year | 4 th year | 5th year |
|----------------------------------|------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Utilization of Capacity | 100.00% | 100.00% | 110.00% | 120.00% | 120.00% | 120.00% |
| Quantities | 456 | 456 | 502 | 548 | 548 | 548 |
| PV panel 1kW | 240 | 240 | 264 | 288 | 288 | 288 |
| PV panel 2kW | 120 | 120 | 132 | 144 | 144 | 144 |
| PV panel 3kW | 60 | 60 | 66 | 72 | 72 | 72 |
| PV panel 4kW | 12 | 12 | 14 | 15 | 15 | 15 |
| PV panel 5kW | 12 | 12 | 13 | 15 | 15 | 15 |
| PV panel 6KW | 12 | 12 | 13 | 14 | 14 | 14 |
| | | | | | | |
| Costs | Costs per solar panel | Costs per year | Costs per year | Costs per year | Costs per year | Costs per year |
| Depreciation Costs | \$110,510.00 | \$110,510.00 | \$83,760.00 | \$76,210.00 | \$29,910.00 | \$660.00 |
| Financing Costs | \$39,404.23 | \$39,404.23 | \$31,523.39 | \$23,642.54 | \$15,761.69 | \$7,880.85 |
| Labor Costs | \$406,602.00 | \$406,602.00 | \$512,442.00 | \$618,282.00 | \$618,282.00 | \$618,282.00 |
| Finished goods and Utility Costs | \$4,414,712.00 | \$4,414,712.00 | \$4,414,712.00 | \$4,414,712.00 | \$4,414,712.00 | \$4,414,712.00 |
| Total Costs | \$4,971,228.23 | \$4,971,228.23 | \$5,042,437.39 | \$5,132,846.54 | \$5,078,665.69 | \$5,041,534.85 |
| | | | | | | |
| PV panel 1kW | \$9,811.63 | \$9,811.63 | \$9,040.23 | \$8,429.86 | \$8,340.87 | \$8,279.89 |
| PV panel 2kW | \$10,356.73 | \$10,356.73 | \$9,542.46 | \$8,898.18 | \$8,804.26 | \$8,739.89 |
| PV panel 3kW | \$10,901.82 | \$10,901.82 | \$10,044.70 | \$9,366.51 | \$9,267.64 | \$9,199.88 |
| PV panel 4kW | \$19,078.18 | \$19,078.18 | \$17,578.22 | \$16,063.56 | \$15,894.00 | \$15,777.80 |
| PV panel 5kW | \$19,895.81 | \$19,895.81 | \$18,080.45 | \$17,013.79 | \$16,834.20 | \$16,711.12 |
| PV panel 6KW | \$20,986.00 | \$20,986.00 | \$19,391.45 | \$18,082.89 | \$17,892.01 | \$17,761.20 |

Self Costs

| Self Costs | 6th year | 7th year | 8th year | 9th year | 10th year |
|----------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Utilization of Capacity | 120.00% | 120.00% | 120.00% | 120.00% | 120.00% |
| Quantities | 548 | 548 | 548 | 548 | 548 |
| PV panel 1kW | 288 | 288 | 288 | 288 | 288 |
| PV panel 2kW | 144 | 144 | 144 | 144 | 144 |
| PV panel 3kW | 72 | 72 | 72 | 72 | 72 |
| PV panel 4kW | 15 | 15 | 15 | 15 | 15 |
| PV panel 5kW | 15 | 15 | 15 | 15 | 15 |
| PV panel 6KW | 14 | 14 | 14 | 14 | 14 |
| | | | | | |
| Costs | Costs per year | Costs per year | Costs per year | Costs per year | Costs per year |
| Depreciation Costs | \$680.00 | \$680.00 | \$680.00 | \$680.00 | \$680.00 |
| Financing Costs | 0 | 0 | 0 | 0 | 0 |
| Labor Costs | \$618,282.00 | \$618,282.00 | \$618,282.00 | \$618,282.00 | \$618,282.00 |
| Finished goods and Utility Costs | \$4,414,712.00 | \$4,414,712.00 | \$4,414,712.00 | \$4,414,712.00 | \$4,414,712.00 |
| Total Costs | \$5,033,654.00 | \$5,033,654.00 | \$5,033,654.00 | \$5,033,654.00 | \$5,033,654.00 |
| | | | | | |
| PV panel 1kW | \$8,268.95 | \$8,268.95 | \$8,268.95 | \$8,268.95 | \$8,268.95 |
| PV panel 2kW | \$8,726.23 | \$8,726.23 | \$8,726.23 | \$8,726.23 | \$8,726.23 |
| PV panel 3kW | \$9,185.50 | \$9,185.50 | \$9,185.50 | \$9,185.50 | \$9,185.50 |
| PV panel 4kW | \$15,753.13 | \$15,753.13 | \$15,753.13 | \$15,753.13 | \$15,753.13 |
| PV panel 5kW | \$16,685.00 | \$16,685.00 | \$16,685.00 | \$16,685.00 | \$16,685.00 |
| PV panel 6KW | \$17,733.43 | \$17,733.43 | \$17,733.43 | \$17,733.43 | \$17,733.43 |

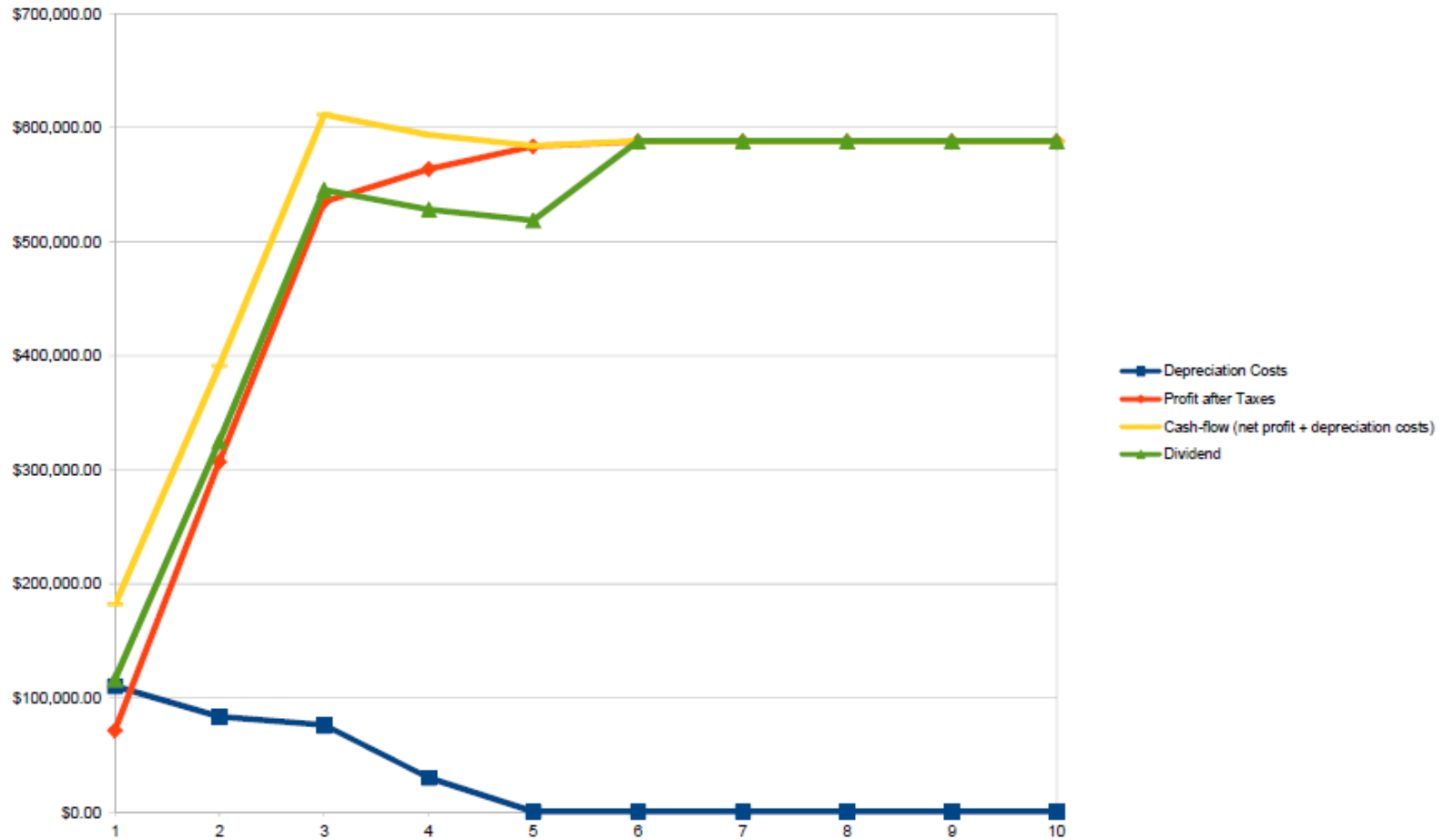
Revenue

| 1 st Year | | | | 5 th Year | | | |
|----------------------|-------|-------------|------------------|-----------------------|-------|-------------|------------------|
| | Sales | Prices | Turnover/Revenue | | Sales | Prices | Turnover/Revenue |
| 1kW | 240 | \$8,500.00 | \$2,040,000.00 | 1kW | 288 | \$8,500.00 | \$2,448,000.00 |
| 2kW | 120 | \$11,000.00 | \$1,320,000.00 | 2kW | 144 | \$11,000.00 | \$1,584,000.00 |
| 3kW | 60 | \$14,300.00 | \$858,000.00 | 3kW | 72 | \$14,300.00 | \$1,029,600.00 |
| 4kW | 12 | \$20,000.00 | \$240,000.00 | 4kW | 15 | \$20,000.00 | \$300,000.00 |
| 5kW | 12 | \$25,000.00 | \$300,000.00 | 5kW | 15 | \$25,000.00 | \$375,000.00 |
| 6kW | 12 | \$29,000.00 | \$348,000.00 | 6kW | 14 | \$29,000.00 | \$406,000.00 |
| Sum | | | \$5,106,000.00 | Sum | | | \$6,142,600.00 |
| 2 nd Year | | | | 7 th Year | | | |
| | Sales | Prices | Turnover/Revenue | | Sales | Prices | Turnover/Revenue |
| 1kW | 264 | \$8,500.00 | \$2,244,000.00 | 1kW | 288 | \$8,500.00 | \$2,448,000.00 |
| 2kW | 132 | \$11,000.00 | \$1,452,000.00 | 2kW | 144 | \$11,000.00 | \$1,584,000.00 |
| 3kW | 66 | \$14,300.00 | \$943,800.00 | 3kW | 72 | \$14,300.00 | \$1,029,600.00 |
| 4kW | 14 | \$20,000.00 | \$280,000.00 | 4kW | 15 | \$20,000.00 | \$300,000.00 |
| 5kW | 13 | \$25,000.00 | \$325,000.00 | 5kW | 15 | \$25,000.00 | \$375,000.00 |
| 6kW | 13 | \$29,000.00 | \$377,000.00 | 6kW | 14 | \$29,000.00 | \$406,000.00 |
| Sum | | | \$5,621,800.00 | Sum | | | \$6,142,600.00 |
| 3 rd Year | | | | 8 th Year | | | |
| | Sales | Prices | Turnover/Revenue | | Sales | Prices | Turnover/Revenue |
| 1kW | 288 | \$8,500.00 | \$2,448,000.00 | 1kW | 288 | \$8,500.00 | \$2,448,000.00 |
| 2kW | 144 | \$11,000.00 | \$1,584,000.00 | 2kW | 144 | \$11,000.00 | \$1,584,000.00 |
| 3kW | 72 | \$14,300.00 | \$1,029,600.00 | 3kW | 72 | \$14,300.00 | \$1,029,600.00 |
| 4kW | 15 | \$20,000.00 | \$300,000.00 | 4kW | 15 | \$20,000.00 | \$300,000.00 |
| 5kW | 15 | \$25,000.00 | \$375,000.00 | 5kW | 15 | \$25,000.00 | \$375,000.00 |
| 6kW | 14 | \$29,000.00 | \$406,000.00 | 6kW | 14 | \$29,000.00 | \$406,000.00 |
| Sum | | | \$6,142,600.00 | Sum | | | \$6,142,600.00 |
| 4 th Year | | | | 9 th Year | | | |
| | Sales | Prices | Turnover/Revenue | | Sales | Prices | Turnover/Revenue |
| 1kW | 288 | \$8,500.00 | \$2,448,000.00 | 1kW | 288 | \$8,500.00 | \$2,448,000.00 |
| 2kW | 144 | \$11,000.00 | \$1,584,000.00 | 2kW | 144 | \$11,000.00 | \$1,584,000.00 |
| 3kW | 72 | \$14,300.00 | \$1,029,600.00 | 3kW | 72 | \$14,300.00 | \$1,029,600.00 |
| 4kW | 15 | \$20,000.00 | \$300,000.00 | 4kW | 15 | \$20,000.00 | \$300,000.00 |
| 5kW | 15 | \$25,000.00 | \$375,000.00 | 5kW | 15 | \$25,000.00 | \$375,000.00 |
| 6kW | 14 | \$29,000.00 | \$406,000.00 | 6kW | 14 | \$29,000.00 | \$406,000.00 |
| Sum | | | \$6,142,600.00 | Sum | | | \$6,142,600.00 |
| 5 th Year | | | | 10 th Year | | | |
| | Sales | Prices | Turnover/Revenue | | Sales | Prices | Turnover/Revenue |
| 1kW | 288 | \$8,500.00 | \$2,448,000.00 | 1kW | 288 | \$8,500.00 | \$2,448,000.00 |
| 2kW | 144 | \$11,000.00 | \$1,584,000.00 | 2kW | 144 | \$11,000.00 | \$1,584,000.00 |
| 3kW | 72 | \$14,300.00 | \$1,029,600.00 | 3kW | 72 | \$14,300.00 | \$1,029,600.00 |
| 4kW | 15 | \$20,000.00 | \$300,000.00 | 4kW | 15 | \$20,000.00 | \$300,000.00 |
| 5kW | 15 | \$25,000.00 | \$375,000.00 | 5kW | 15 | \$25,000.00 | \$375,000.00 |
| 6kW | 14 | \$29,000.00 | \$406,000.00 | 6kW | 14 | \$29,000.00 | \$406,000.00 |
| Sum | | | \$6,142,600.00 | Sum | | | \$6,142,600.00 |

Cash Flow

| Cash Flow | 1 st Year | 2 nd Year | 3 rd Year | 4 th Year | 5th Year | 6th Year |
|---|----------------------|----------------------|----------------------|----------------------|----------------|----------------|
| Turnover/Revenue | \$5,106,000.00 | \$5,621,800.00 | \$6,142,600.00 | \$6,142,600.00 | \$6,142,600.00 | \$6,142,600.00 |
| Depreciation Costs | \$110,510.00 | \$83,760.00 | \$76,210.00 | \$29,910.00 | \$660.00 | \$660.00 |
| Labor Costs | \$406,602.00 | \$512,442.00 | \$618,282.00 | \$618,282.00 | \$618,282.00 | \$618,282.00 |
| Finished Goods Costs | \$4,414,712.00 | \$4,414,712.00 | \$4,414,712.00 | \$4,414,712.00 | \$4,414,712.00 | \$4,414,712.00 |
| Financing Costs | \$39,404.23 | \$31,523.39 | \$23,642.54 | \$15,761.69 | \$7,880.85 | \$0.00 |
| Loss Carried Forward | | | | | | |
| Profit before Taxes | \$134,771.77 | \$579,362.61 | \$1,009,753.46 | \$1,063,934.31 | \$1,101,065.15 | \$1,108,946.00 |
| Taxes (47%) | \$63,342.73 | \$272,300.43 | \$474,584.13 | \$500,049.12 | \$517,500.62 | \$521,204.62 |
| Profit after Taxes | \$71,429.04 | \$307,062.19 | \$535,169.33 | \$563,885.18 | \$583,564.53 | \$587,741.38 |
| Cash-flow (net profit + depreciation costs) | \$181,939.04 | \$390,822.19 | \$611,379.33 | \$593,795.18 | \$584,224.53 | \$588,401.38 |
| Repayment Credit | \$65,673.72 | \$65,673.72 | \$65,673.72 | \$65,673.72 | \$65,673.72 | \$0.00 |
| Dividend | \$116,265.32 | \$325,148.47 | \$545,705.61 | \$528,121.46 | \$518,550.81 | \$588,401.38 |
| | | | | | | |
| 1% Profit Bonus for employees | \$5,813.27 | \$16,257.42 | \$27,285.28 | \$26,406.07 | \$25,927.54 | \$29,420.07 |
| | | | | | | |

Conclusion



Conclusion

- ▣ Growing market and diminishing costs of finished goods and increasing prices of electricity
- ▣ High irradiation during the summer months in Mexico
- ▣ Payback period of the total investment is calculated in 3 years
- ▣ Not so competitive in 1kW panels. This also encourages customers to buy bigger systems and contribute to the grid.