Tetra West Solar

WHAT IS THE PAYBACK FOR MI-GRID?

Grid-Tied

Mi-Grid doesn't sell power to the utility. It saves all of the extra energy in the batteries to use later. If the utility pays less for your solar power than you pay them for electricity, you save 30% more than if you sell your power.

Example: Electricity is $0.20/kWh and the electric company buys excess solar for $0.10/kWh. Our models show that approximately 50% of grid-tied solar is sold to the utility.

If 100 kWh is normally consumed in a day, the cost is $20. If 100 kWh of solar are produced, but 50 kWh are sold to the utility, $10 is avoided, $10 is purchased and $5 is paid to the end user. Net electric cost is $5. Net savings is $15.

Mi-Grid stores all excess solar energy produced. No power is sold, savings a full $20. This is a 33% additional savings over standard grid-tied solar.

The battery based system adds about 20% cost compared to grid-tied solar. This is more than off-set by the additional savings. Payback is faster than Grid tied.

Off-Grid

There are two type of systems for off-grid. 1) Off-Grid Solar. 2) A generator.

Off-Grid Solar

Off-Grid solar uses no fuel. But it requires a sizable capital investment. You must size the batteries to carry you through multiple days without sun. And the solar array must be designed to produce enough power to recharge the batteries.

Mi-Grid uses a generator to cover contingencies. This allows the solar array to be sized for average power used and the battery bank sized just to absorb the extra solar power. This reduces the battery bank to about 1/3rd to 1/6th the size and reduces the solar array by 30-50%. Capital costs are reduced by at least 50%.

Generator

Generators need small capital investment for off grid. But this is quickly overwhelmed by operational costs.

Generators use fuel, but they also require maintenance. And Generators have a finite life.

Fuel costs are typically reduced by 90% when using a Mi-Grid when compared to a generator.

Generator run time is reduced by 90% as well. This increases calendar time between maintenance and increases calendar life of the generator.

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MI-GRID

CASE STUDIES

Grid tied Business

Electricity cost $0.12 per kWh

Avg. daily usage is 75kWh/day.

Mi-Grid 2000, installed with 11kWh of Solar. Cost $50,000

System will produce 71.5kWh/day avg., or 26.1MWh/year. Savings is $3132/yr. US Government Tax Savings reduce the cost of the system to: $18,212.50. Payback is 5.8 years.

Food Truck

4kW Generator cost: $600, Generator life 1000 hours, 50hr Maintenance: $10, Gasoline $2/gallon, Generator runs 50hr/week, Average load is 1kW. 10kWh/day

Mi-Grid 250, with 1kW of solar installed: $7200

Average fuel consumption is 0.35 gal/hr. or 3.5 gallons per day, $35 per week. Generator life value is $0.60 per hour or $30/week. Maintenance is $10/week. Total weekly cost $75

Mi-Grid will recharge overnight and consume 2.5kWh, $0.50, 1 kW of solar will produce 5kWh of electricity. Balance is 2.5kWh to be produced by the generator. Generator will run 1 hour at 2.6 kWh load, 0.45 gal/hr. Total is 2.25 gallons per week, $4.5.

Maintenance cost is reduced to $1/week and life cost to $3/week. Total is $9/week, savings $66/wk.

US Government tax savings (ITC and MCARS) reduce system to $4122. Payback is 62 weeks or 15 months.

Off-Grid Building

12kW Generator cost: $8000 life 10,000 hours. 500hr Maintenance: $100. Propane $2/gallon. Runtime:60hr/week. Average load is 2.5kW. 60kWh/day, 1.32 gal/hr. $160/week. Maintenance cost/week: $12. Generator Life cost/week:$48. Total cost per week:$220.

Mi-Grid 2000, Installed cost with 10kWh of Solar. $50,000. After US Govt. Tax savings: $18,212.50. Produces 65kWh/day. Payback is 82 Weeks or 1 1/2 years.

Off-Grid Business 7days/week

Generator runs 168hr/week. Average load is 2.5kW. 60kWh/day, 1.32 gal/hr. $450/week. Maintenance cost/week: $35. Generator Life cost/week:$135. Generator cost per week:$620. Payback is 29 Weeks or 1/2 year.

Off-Grid business Solar Only

Mi-Grid stores 1/2 day of solar. Fully off-grid needs 3 days of storage or 6x battery bank. Solar array 50% larger. No Generator. Total installed cost $98,900.

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