

SOLAR ENERGY – WAY FORWARD 2010

Solar Power Harnessing – Things to come in the future in India

One of the few changes one is likely to see in the coming years is the integration of Solar power harnessing in Building Technology and transportation.

Example 1

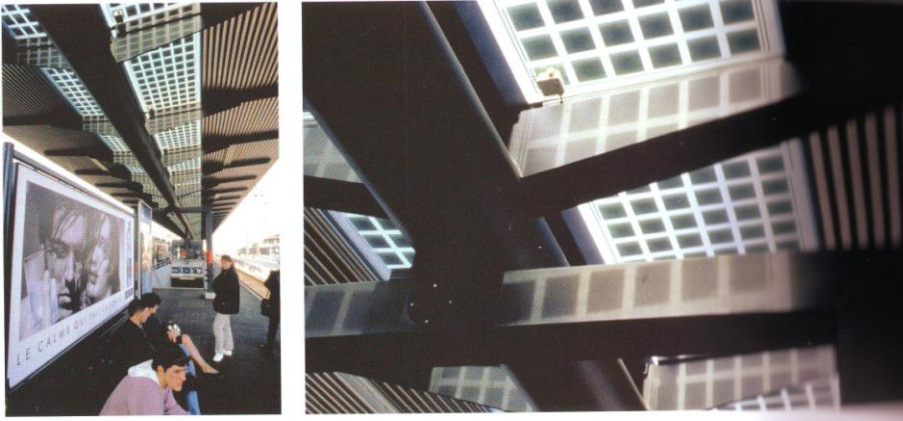
With the availability of Sun harnessing in the country, Architects and Developers will be apt to use, integrated silicon Photo Voltaic cell panels on curtain wall systems and integrate the electrical systems in the building.



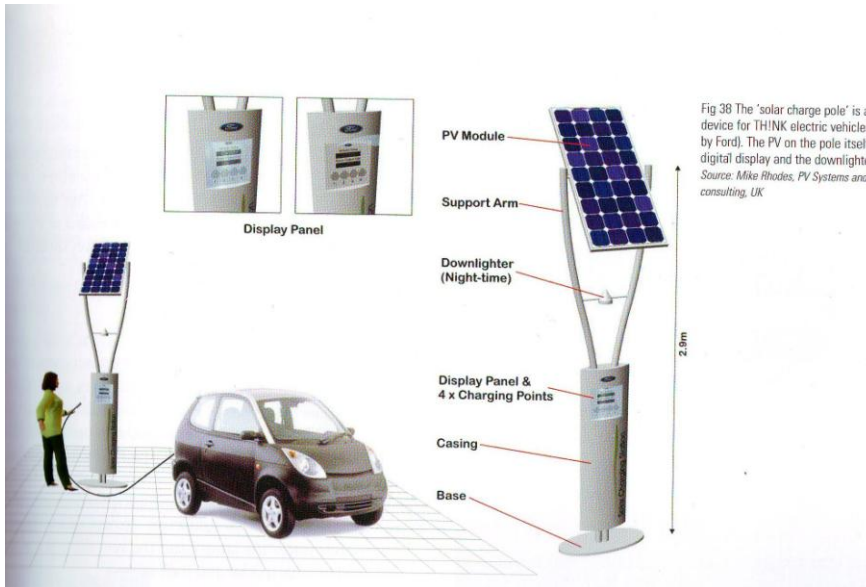
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Example 2

There will be more structures in mass transit infrastructure projects incorporating the use of Solar cell panels integrated into the design, for example, Bus stop shelters, Mass transit Stations, Airport Terminals, etc. What will be needed is the active participation of Govt; and International Corporations in encouraging and adopting design practices which can be suitably rewarded with citations and International Awards instituted for the same.



Public Bus Shelter



Future Electric charging Station for City cars

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CASE STUDY 1- Agriculture & Solar ENERGY

Working with a team of experienced solar professionals, one can build hundreds of solar electric systems in India. In the USA and other Asian countries, engineers have designed off-grid systems for remote ranches and farms, as well as larger grid-tie systems for farms and vineyards.

Use the sun to grow your crops and increase your profits

From water pumping to heating

Farms using solar electricity can dramatically reduce or eliminate the need for other sources of power generation while pumping water, drying crops, warming homes and livestock buildings, or running lights and machinery.

Reduce costs immediately

Solar electric systems provide protection from rising energy prices and may eliminate the costs of peak-hour use, while increasing your farm's self-reliance. Solar systems will continue to provide pollution-free and virtually maintenance-free energy long after the system pays for itself.

Benefit from cash incentives and tax credits

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Thousands of dollars are available from federal, state and local programs to help offset the cost of solar electric systems. In the USA, as per studies, California farmers can receive up to 30% in federal tax credits and more in utility rebates. Special loans, leasing options and performance-based payments are also available.

Then why not we emulate a similar practice in our country!

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Case Study 2 – Commercial Solar ENERGY

Working with a team of experienced solar professionals, Engineers have built hundreds of solar electric systems across the Globe. The design work spans the range of building size and need, from small business to large manufacturing.

Generate your own electricity

Lower or eliminate your electric bill using solar energy.

Solar panels mounted on the roof or ground convert sunlight directly into electricity, and send the power into your building. If you generate more power than you use, the extra electricity runs your electric meter backwards and credits your account. Most businesses have enough sunlight to generate all their electricity from solar energy.

Cash incentives and tax credits available now

As a case study in the 1900s , in USA Utility Companies in California pay cash rebates in thousands of dollars for putting in solar electricity and solar hot water. There are federal tax credits of 30% for businesses. These amounts are changing soon.

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Benefit from your investment for many years

In addition to the many environmental benefits of using solar energy, there are plenty of worthwhile financial benefits as well;

- a hedge against future electric price increases
- a secure investment, because solar panels are a proven technology
- a boost in the resale value of your commercial property
- financing that can make your investment cash positive the first month

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Case Study 3- Residential Solar ENERGY

Solar Cell designs can have high quality solar power systems.

Working with a team of experienced solar professionals, engineers have built hundreds of solar electric systems in all parts of the world. Corporations which need to be considered are those specialising in residential systems, on all types of roofs, and custom installations from cottages to mansions.

Generate your own electricity

Lower or eliminate your electric bill using solar energy.

Solar panels mounted on the roof or ground convert sunlight directly into electricity, and send the power into your building. If you generate more power than you use, the extra electricity runs your electric meter backwards and credits your account. Most homes have enough sunlight to generate all their electricity from solar energy.

Cash incentives and tax credits available now

Many countries offer cash rebates to pay thousands of dollars, euros for putting in solar electricity and solar hot water. In the United States Of America there are federal tax credits up to 30% for businesses, and \$2000 for homeowners. These amounts are changing soon, given the Climate control acts being enforced soon.

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Benefit from your investment for many years

In addition to the many environmental benefits of using solar energy, there are plenty of worthwhile financial benefits as well

- a hedge against future electric price increases
- a secure investment, because solar panels are a proven technology
- a boost in the resale value of your home or commercial property
- Financing that can make your investment cash positive the first month.

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FINANCIALS

Economics of Solar ENERGY

A properly designed and sized solar system can eliminate all or most of your annual electricity bill. The higher your average monthly electric bill and the higher electricity rates keep climbing, the more advantageous and economically viable a solar system will be. Solar electric is most profitable if your average electricity bill is over Rs 4000/- a month, but systems can be designed for any size.

Utility electricity suppliers have rate options that benefit solar users

- Net metering allows excess solar electricity created to be returned to the utility grid, spinning your meter backwards.
- Time-of-use metering gives you a premium rate on excess solar created during the daytime and summer months when your panels are most productive.
- Offsetting even a portion of your electric utility bill with solar can put you in a lower usage tier and gives you a lower rate for electricity purchased from the utility.

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- **Paying for themselves**
- Strong investment rate of returns prove solar electric to be a secure financial investment.
- Depending on the size of the system, solar electric will pay for itself in 5 to 15 years.
- The solar panels that manufacturers install come with a 20 or 25 year warranty, and are estimated to last much longer than that. For example, some solar panels built in the 1960s are still in operation today.
- A solar electric system will add value to your property, often raising the resale value more than the initial price you paid for the property.

Note: The author of this article is an Architect and Thinker and welcomes a meaningful discussion