

Case study of
WESTLAKE ENTERPRISE
Sunder Industrial Estate



ENERGY EFFICIENT AND ENVIRONMENTAL FRIENDLY INDUSTRY

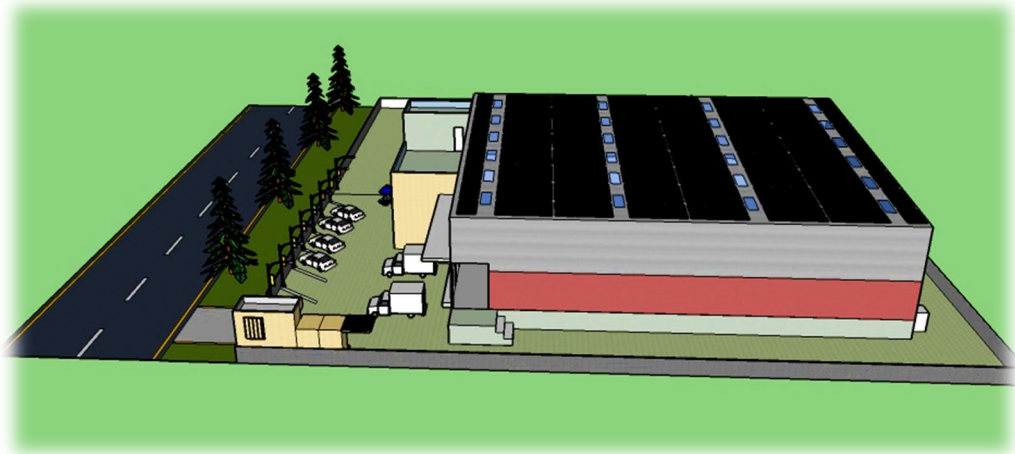
**“Sunder: aiming at environment friendly
industrial zone”**

By Syed Zaigham M. Rizvi

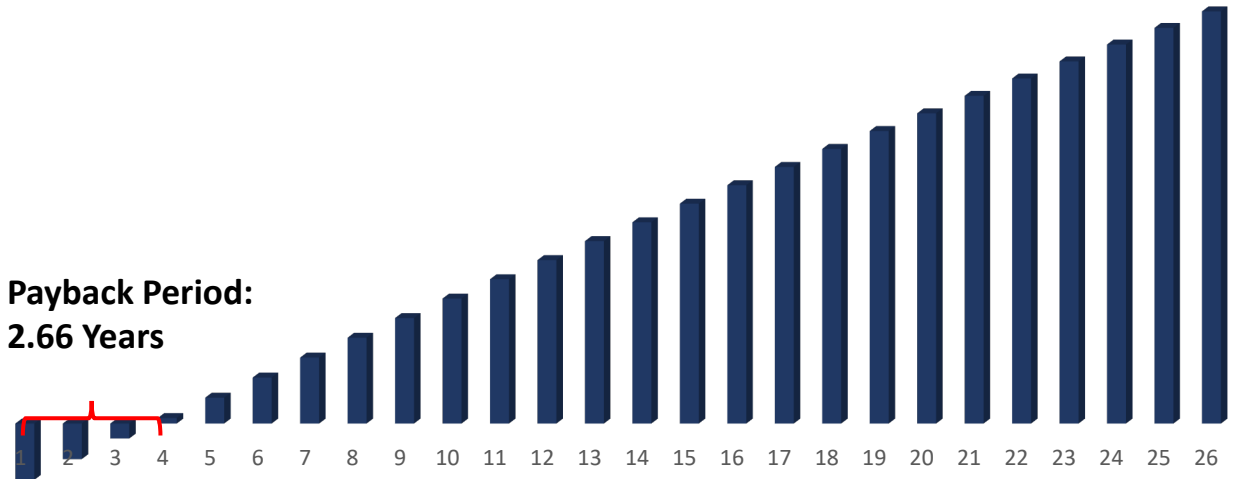
ECONOMICAL ANALYSIS OF SOLAR ROOFTOP INSTALLATION ON WESTLAKE ENTERPRISE

250 KW solar system installation being planned at Westlake Enterprise at SIE will give multiple benefits:

1. **Offer Cost Savings-** Residential or industrial Rooftop solar installations can even help in cutting down electricity bills.
2. **Solar is one-time long-term investment-** A **“GOOD QUALITY SOLAR SYSTEM”** has a life of 30 years and beyond.
3. Its **maintenance cost is minimal** since I has no moving part. Needs just safe cleaning on Panels.
4. At present financing support from the bank at **Markup as low as 6%**.
5. Its **Architect/Consultant Ms. Chisty Bros-Lahore** have done an extremely good job in designing all that system, making all those provisions right at the design stage.



Payback Period:
2.66 Years



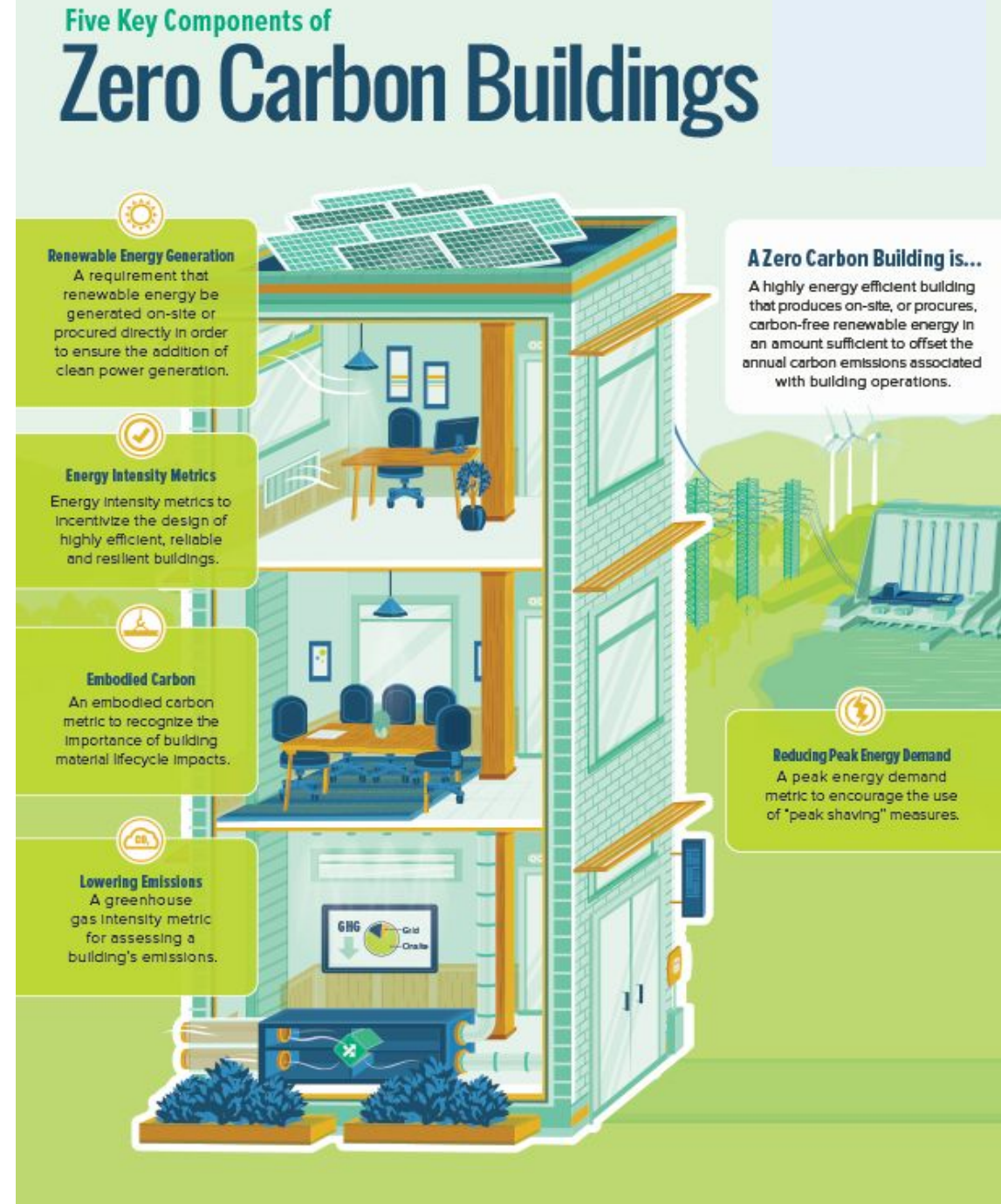
Return on investment: 25 years & beyond

Macro-Economic and Balance of Trade— a national cause:

- A large part of energy fuel is imported Fossil Fuels/Oils, which draws on precious forex resources. This adversely impacts the imports bill and “Balance of Trade”.
- Moving to local sources of energy, more so “Renewables” like Solar, Hydro, Wind, Ocean, Biomass, etc. will replace imported fossil fuels and so will have positive impact on the Economy and Balance of Trade.

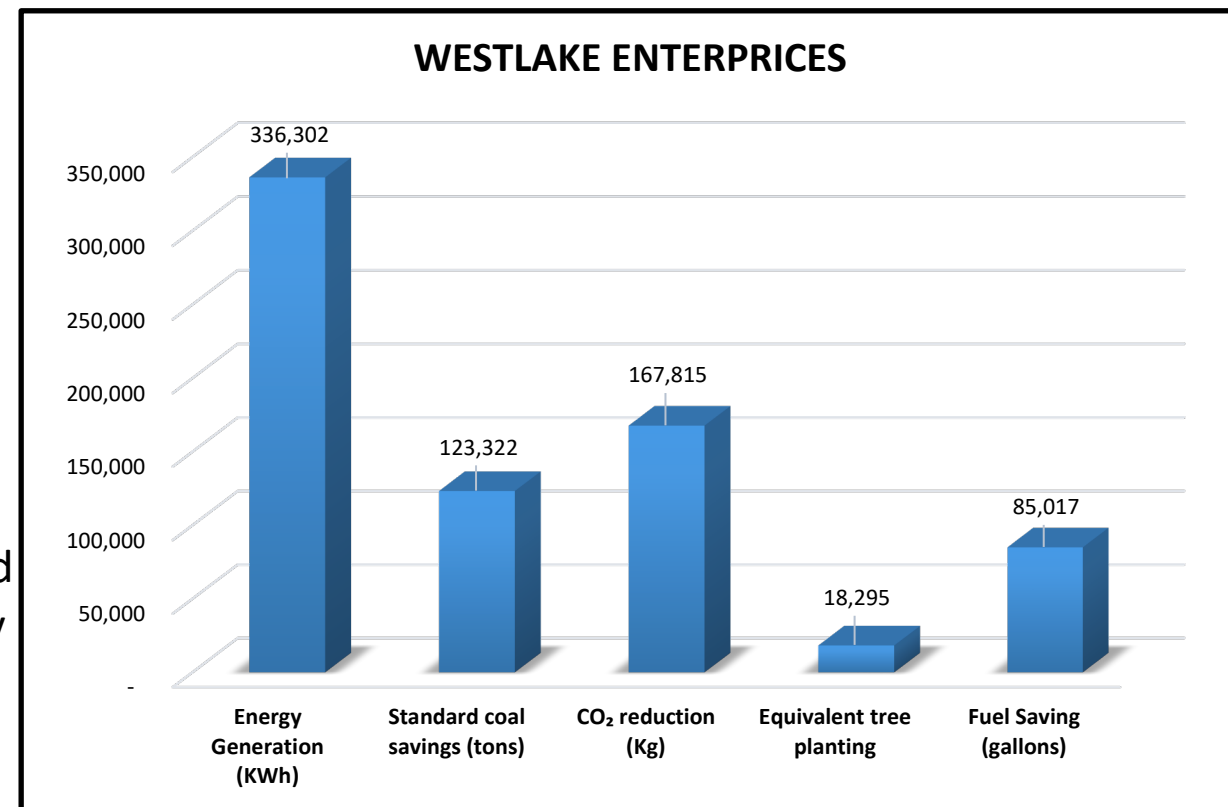
Micro-economics of the end user through savings in Electricity cost- a personal cause:

- **Pay-Back in 4-5 Years:** Pay-back periods generally range in 4-5 years. During this period the solar system recovers its own cost. So you are not getting anything in your pocket.
- Next 6-30 years and even beyond: The system will literally be providing you **electricity at zero cost.**
- **Only A GOOD QUALITY Solar System will ensure that it will perform for next 25-30 years and beyond.**
- That is why “Quality” of the Solar System is important for you, since quality ensures life, efficiency and performance, so as to give Environmental benefit, Macroeconomic benefit, and indeed savings in the user’s electricity bill.



ENVIRONMENTAL CONSIDERATIONS

- **Green source of energy-** This is an era where more and more people are adopting eco-friendly items. The consumers, especially industrial and commercial consumers, are willing to make capital investments to contribute towards the preservation of the environment. Environment-friendly customers are even willing to pay higher than grid power.
- **Reduces Carbon Footprints-** pose fewer pollution risks to the environment in comparison to conventional sources of energy. Furthermore, it is a good source of energy that combats climate change. Carbon is also as source of “SMOG” in certain weather conditions. Economic activities of Lahore gets impacted due to SMOG for 2-3 months in a year.
- An exporter entity/exporting country, which is not environment friendly as certified on “Carbon Footprint” and “Clean Development Mechanism” is being denied export by some international importers/importing countries. Pakistan is soon going to be victim of that.



Carbon Credit, Carbon Footprint and Clean Development Mechanism in region.

Carbon mechanism is very active in the region and way advanced in the countries of region:

Case of Pakistan:

In Pakistan there is no Carbon Monitoring System and Entity. While AEDB is supposedly responsible for this, they seem to be not fully equipped and so not active on this area.

For Carbon Trading, Pakistan also has a platform of Commodity Exchange.

It is feared that none of our export industry in ever seems to be conscious or concerned on **Carbon Footprint and Clean Development Mechanism** matter

We will wake up when hammer will be on our head. It will be too late then

Case of India:

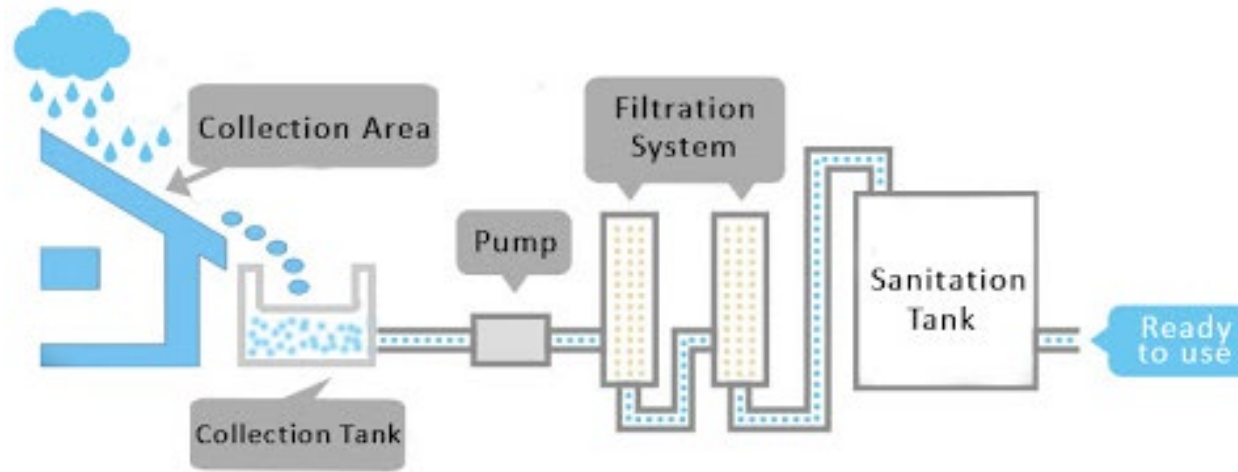
India has a very vibrant Carbon Credit Market. Carbon Credit is being traded at Commodity Exchange of India. Exporting Industry buys needed carbon credit from the exchange to get CDM Certified needed to export to satisfy importer. (Kyoto Protocol, Paris Protocol, Morocco Protocol etc)

India has already installed 40,000 MW of Solar Power, and is targeting at 100,000 MW by 2020. So you can imagine how much Carbon Credit it will save. This is over and above the Hydro, Wind, Biomass Power generation.

Let us wake up now, before we get a wake up call through a hammer on our head.

RAINWATER HARVESTING: A SUCCESSFUL ALTERNATIVE TO CONSERVE WATER

- According to experts Pakistan is facing one of the worst water crisis at the moment.
- Water bed I Lahore is falling very deep and very fast. Dry river bed is alarming on this for last 2-30 years
- Rain Water Harvesting provides the best possible alternative and supplementary source of water in a situation where existing water sources are depleting and fail to fulfill the needs of a growing population.
- Westlake Enterprises knows that Rainwater Harvesting (RWH) system is progressively becoming a part of the sustainable water management measures.
- Rainwater harvesting is a process that captures, stores and reuses rainfall water. Harvesting rainwater is one of the simplest of ways in which we can live sustainably with nature. A rainwater harvesting system works by collecting the rain from roof gutters, filtering it and storing the water in a tank.
- The **average monsoon rainfall precipitation in Lahore** is **628.8 millimeters (24.76 in)**.



“It’s a wise decision to set up rainwater harvesting system for your commercial buildings to overcome the problems of lack of water!”

Rain Water Harvesting at Westlake Enterprise

1. All rainwater falling on Rooftop Solar Panels, as per designs gets collected through a well designed water channel system
2. Rainwater gets collected into a 10,000 gallons Water Tank.
3. Assuming 20-25 rainfalls in a years, while actually these are much more, the system will be able to harvest and use 2-2.5 lac gallons of rain water in a year.
4. This water could be recycled an used for factory use, and surplus to be available for supply to the SIE Water System.
5. The rainwater is generally clean, except having some environment dust, or microorganism from plants. Once cleaned/filtered o that, it can be used as god quality rain water as well.
6. WE have engaged PCSIR to design Sand and Bitumen Filters, for filtration of this water.
7. PCSIR has also been asked to locally develop Membrane Filters for RO Plants, which is currently being imported, so makes it expensive and unaffordable.



SOLAR WATER HEATER

Heating water is very expensive as it requires a huge amount of energy. Almost 18% of domestic energy is used to heat water and this energy is generated from fossil fuels – gas and oil.

By installing it Westlake enterprises get following advantages:

1. Using free energy! Solar energy is free and abundant (even in cloudy weather).
2. Solar thermal panels take up less space than solar PV panels.
3. They are efficient. Approximately 80% radiation is turned into heat energy.
4. They lower your carbon footprint.
5. You save money on fuel bills.
6. There are some safety issue that system get overheated and so gets blocked v this by designing som safety valve system.



Wayforward: a few doable

We are making arrangements that at BoM Office, following is displayed on a computer screen:

Carbon Credit:

Since good quality Invertors, have a provision that through its Wifi System, they can transmit info on power generation, carbon saved etc.

Individual data on carbon saved by Westlake Enterprise will be transmitted to the Screen at BoM Office.

Once more Industrial units will join the system, we would get collective information on carbon Saved on daily basis.

Thus we would know as how much Surplus Carbon Credit is available for possible sale and use by exporting industry within Sunder and outside.

This will be a humble beginning of “Carbon Credit Trading” and “Clean Development Mechanism” market in Pakistan, till such time we have a national platform like we see in India.

Solar Geisers will also save use of Fossil Fuel/Gas.

Rainwater Harvesting and Water Recycling and reuse:

Following the pattern being developed at Westlake Enterprise, we can discuss and expand this area as wel..

Actions Way-Forward

- **Create awareness on environment benefits of Solar Power among industry, Commercial Buildings and Rooftop Solar.**
- **Monitoring of Carbon Credit (CC) and Clean Development Mechanism (CDM) at national level through agencies like AEDB.**
- **Carbon Trading through platform of Commodity Exchange.**
- **Exporters to be aware of challenges ahead in shape of Carbon Foot-Pint and CDM, and threat of ban on exports**
- **All Industrial Estates to go for Solar/Renewable Energy Options.**
- **Sunder Industrial Estate is working on to have a local centralized monitoring mechanism for Carbo Footprint. The mission will move on to Punjab Industrial Estates Development & Management Co. (PIEDMC).**
- **Some incentives for Rooftop Solar for the Carbon Saved, and later on possibly sale at Commodity Exchange**



THANKYOU

"Green is not something you can buy Green is the way of life"

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