

# A Brief History of Solar Energy.....



**and where it might be headed**

A Brief History

Solar Energy Prices Changing

Conventional Energy Prices

The Environment

Your Own Power Plant

More Reasons to Go Solar...

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# 1

A Brief History

Solar Energy Prices Changing

Conventional Energy Prices

The Environment

Your Own Power Plant

More Reasons to Go Solar...

If you're curious about solar energy, want to know about the background and some of the potential of solar power, then this ebook is written for you. I hope you find it useful.

## **A Brief History of Solar Energy**

It all started during the space race. Russia and the United States were sending satellites into the atmosphere. These satellites had big arrays of solar panels to power them. So early on lots of money was invested into making solar panels durable and reliable. After all, replacing them was very difficult.

Once the space race ended, investment in solar technologies slowed down. Solar panels occupied an uncomfortable position. They were too expensive for the mainstream marketplace, and there wasn't a pressing need to make them more affordable.

Then global warming and climate change began to emerge. The oil crisis of the 1970's, the war in the Middle East, pollution, acid rain, El Nino, the Amazon rainforests, melting glaciers, the hole in the ozone and endangered species.

Suddenly, there was a need for a clean, reliable energy producing technology.

A Brief History

Solar Energy Prices Changing

Conventional Energy Prices

The Environment

Your Own Power Plant

More Reasons to Go Solar...

We are now in a very interesting time, both for solar energy and for our world. The Kyoto protocol has been ratified by 174 countries and government have invested large amounts to encourage solar energy adoption.

And solar manufacturers have begun their own solar race to see who can be the first to make solar cheaper than coal.

Solar energy has been evolving steadily over the last several decades. We are now in a situation where the demand for solar energy is bigger than the supply. This puts the solar energy industry in a very interesting position.

So, with this backdrop, let's examine some of the factors that have prompted solar to merge into the mainstream.

# 2

## Falling Solar Prices

Firstly, Solar Panels have become more efficient over time. Secondly, as solar panels have become more efficient the energy they produced costs less.

A Brief History

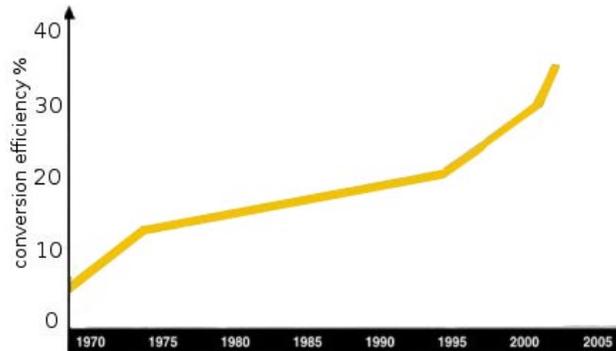
Solar Energy Prices Changing

Conventional Energy Prices

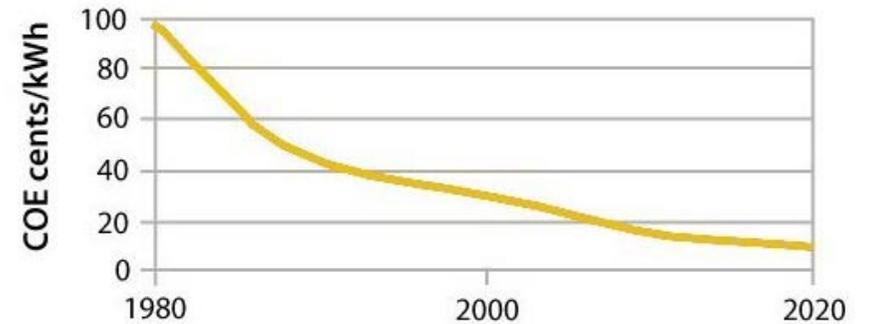
The Environment

Your Own Power Plant

More Reasons to Go Solar...



Solar Panel Efficiency



Cost Solar Energy

Here are some graphs to show how solar panel prices have changed over the last few years.

The graph above left shows solar efficiency results in factory conditions. This is a measure of the % sunlight converted to electricity.

The graph above right shows how the cost of solar energy (in cents per kWh) has steadily fallen since 1980.

# 3

## Rising Conventional Energy Prices

The graph on the left shows the rising price of conventional electricity. And on the right is a graph from the Deutsch Bank Index. It shows how crude oil has risen from around 10 dollars a barrel to 80 dollars in the last decade.

That's an 800% increase.

A Brief History

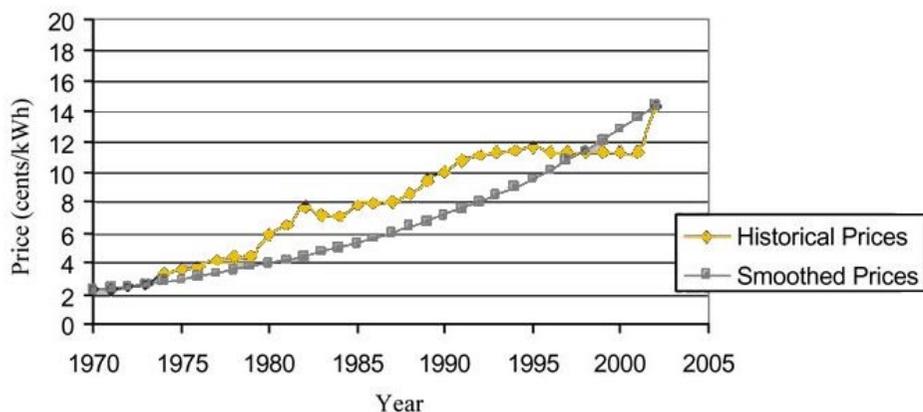
Solar Energy Prices Changing

Conventional Energy Prices

The Environment

Your Own Power Plant

More Reasons to Go Solar...



Energy Prices 1970 to 2005



Oil Prices 1999 to 2007

Conventional energy has gradually become more expensive. This is partly due to inflation, and partly due to the fact that most conventional energy depends on extraction from sources far away from its point of use. In other words, most energy is produced from coal, which needs to be mined and transported. This ties it in with the price of oil. As oil prices rise, so do conventional energy prices.

# 4

A Brief History

Solar Energy Prices Changing

Conventional Energy Prices

The Environment

Your Own Power Plant

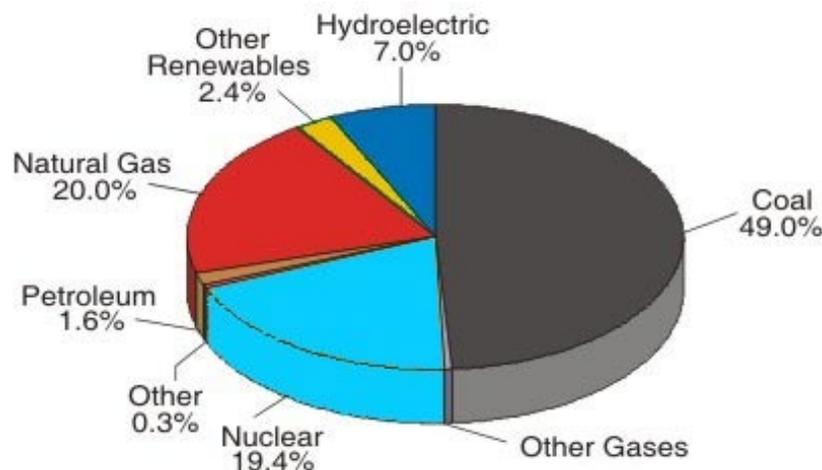
More Reasons to Go Solar...

## The Environment, Global Warming and Climate Change

One of the great challenges of our time. If you think back, people in the 1920's had as their backdrop World War I and the beginning of World War II. In the 1950's the challenge was the Great Depression and the later emergence of nuclear weapons worldwide.

The destruction of the Amazon rainforest became a concern in the 1980's. This has grown to a worldwide awareness of global ecology. Global warming is in the backs of our minds, even if few people are actively involved in studying or attempting to counter it.

Solar energy is one of several renewable energy sources that produce energy without producing carbon dioxide. Effectively, power made with solar energy reduces the greenhouse gases which cause global warming. Solar energy also reduces our reliance on fossil fuels.



This is a pie chart showing how our energy was produced in 2006. As you can see, all renewables – wind, solar, etc. made up just over 2% of total power production.

Coal produced about 50% of our energy. Is this going to dramatically change? It's possible. If you look at other rapid changes: ie. the adoption of computers or cars, it might be.

Our climate dramatically changing could also affect solar power adoption.

# 5

A Brief History

Solar Energy Prices Changing

Conventional Energy Prices

The Environment

Your Own Power Plant

More Reasons to Go Solar...

## A Personalized Power Supply

Solar energy is unique in that it is generated at its place of use: ie. on your roof. This trend of personalized energy production is echoed throughout the world today.

Consider: personal computers. Personal transport (cars.) Personalized library/entertainment (internet.) Work from home businesses. Personal sound systems (ipods and mp3 players.) Personal communication networks (cellphones.)

Indeed, already solar is being plugged into portable personal systems like cellphone battery chargers and laptops.

So it's not a large stretch of imagination to see that in a few years personal power plants could become the norm.

In effect:

Seen this way, even coal energy has the sun as its source. After all, over millions of years forests trapped the sun's light. They were then buried and fossilized into coal over millions of years. When coal is burnt, it is simply releasing the trapped sunlight it has stored.

Solar energy is our **oldest** and our **newest** form of energy.

We are just learning how to harness it.

# 6

## More Reasons to Invest in Solar Energy

A Brief History

Solar Energy Prices Changing

Conventional Energy Prices

The Environment

Your Own Power Plant

More Reasons to Go Solar...

### **Control Your Power Bill**

With solar panels installed, you have a buffer against rising power prices. Unless power companies figure out a way to charge you for the sunlight that falls on your roof, that power price is controlled by you. In effect, you can 'fix' the price of your solar electricity for up to 25 years.

And with rising power prices, this is becoming a very attractive option.

### **Increase Your House Value**

Several studies have shown that solar panels add value to your house. After all, solar panels may cost as much as installing a swimming pool or upgrading your kitchen. But while not everyone may want a pool or agree with your kitchen décor, very few people mind a very small power bill.

### **Green Your Businesses**

Having solar energy can enhance the image of most businesses. 'Going Green' is a major trend in today's society. So if you own your own business, in addition to the tax rebates, solar power can give you a positive environmental image.

### **The Environment.**

There is a lot of conflicting information around this topic. Whether solar energy is the answer remains to be seen, but one thing is certain: solar energy is a lot better for the environment than coal.

A Brief History

Solar Energy Prices Changing

Conventional Energy Prices

The Environment

Your Own Power Plant

More Reasons to Go Solar...

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Best Regards,  
The team at Solar Trading Post LLC

A Brief History

Solar Energy Prices Changing

Conventional Energy Prices

The Environment

Your Own Power Plant

More Reasons to Go Solar...

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