



20 JAN, 2023

Solar advancements

The Star, Malaysia



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As the world explores more ways to replace carbon-based fuels as a source of energy, one of the ways that has been discovered since the 1870s was solar electricity, using selenium. However it was only in 1954 that the first silicon photovoltaic (PV) cell was made at Bell Labs.

Today, PV cells are one of the best alternative sources of electricity, but whether this remains viable and affordable, solar experts share their views.



Regine Choo
 Project director
 Yongyang Solarroof

Firstly, for technological advancement we are now more concentrated on mono-crystallised hybrid technology with higher cell efficiency.

Back 10 years ago, we were getting 200-watt panels but now we have almost three times the capacity, with 600-watt panels on the way.

Installation-wise, we could see the advancement moving from rooftop installation on houses scaling up to commercial, industrial and agricultural, even to governmental and the community.

We also see the market moving on to utility skills on-the-ground as well as looking beyond rooftop to carport and land, floating solar, and the building faster application.

Prices have come down tremendously in the past 10 years, having dropped more than 80% - making it affordable, especially when coupled with an attractive payment scheme for domestic installation.

Commercial users could actually leverage on government tax incentives to accelerate returns in investment in less than three years.

Everyone's concern is about how

they will be getting on the return of their investment (ROI) as solar is considered an investment.

Previously the ROI has been about seven to eight years but now we hope to see an improvement, especially for residential and depending on the economies of scale, this may go down to about three years.

Solar PV systems actually qualify for renewable energy credits.

There have been early adoptions of renewable energy credits programme that enable the solar PV system to be registered and to get the renewable energy credits and a certified documentation as proof on their carbon emissions and also their carbon footprints.





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Jonathan Kan
 Managing director / co-founder
 ERS Energy

Since 2009 until now we have seen a 75% reduction in cost and it has become very accessible to everybody. The industry has been budding as we have the right climate to take advantage of the solar resources and that's why this has made solar PV systems generate cheaper electricity than even some gas plants.

Although back in 2009 when people talked about solar they were thinking about solar water heaters but the popularity has picked up within the past few years. The uptake is

real due to solar being more affordable and accessible.

However there are remaining issues with the current technology, such as intermittency and that's why energy storage has to also be considered. Solar will be driving the next stage of growth.

Solar PV modules generally come with a 25-year performance guarantee, which means after 25 years you will get 80% of its capacity, but these are backed by insurance companies that ensure your warranties last even if the companies do not.

Having said that, in a practical sense in 10 years time whatever solar panel you buy today you will not be able to source for the exact same one and that's because the industry and technology will continue to advance.

Although considered expensive, battery storage for solar energy is here to stay. And while there are talks about new sources of solar energy types, these will need time to be commercialised, but batteries are here and becoming more accessible. That will drive the cost down in years to come.



Mitch Gelber
 Chief executive officer
 Malaysia Green Building Council

The Green Building Council is a leading non-governmental organisation in Malaysia that is non-profit and a member of the World Green Building Council and part of the over 70 national councils worldwide.

We have recently been expanding beyond green buildings and considering issues such as the circular economy, health and well-being, net zero and zero carbon building.

One programme that we plan to

roll out early this year is a carbon score that shows how close the building is to achieve the ultimate zero carbon emissions goal.

One of the key components of this is solar, which involves the decarbonisation of the electricity grid and on-site solar from rooftop or on-site PVs.

When it comes to ESG, the environmental impact is the most urgent and that is to release our use of fossil fuels.

Our grid sits at about 92% fossil fuel use, and accounts for the emissions associated with fossil fuel burning.

Malaysia has committed internationally to the United Nations to reduce emissions by 45% as compared to 2005 levels and to achieve the ultimate goal of zero carbon neutrality by 2050.

Solar electricity is by far the best and most immediate most actionable solution that we have now and the economics already makes sense, so this is how solar contributes to ESG.



Yusrizal Mohd Yusof
 Managing director
 TNB Renewables Sdn Bhd

The availability of financing especially for household solar are available, with options such as credit cards being one, or having cash outlay from the homeowners.

The availability of the net energy metering scheme that allows the surplus energy to be transported back to the grid will enable homeowners to claim some sort of rebate from the energy that is being transmitted.

There are also companies that have attempted to provide zero capex solutions even for housing options but it's quite limited. There are also financial options offered by banks in terms of personal loans specifically for the solar installation.

CNI zero-capex solutions are widely available and most installations are under this scheme, as the costs are driven down in the market.

We can see at any time now installation of even relatively smaller installations of 100 or 200 kilowatts are able to provide a tariff lower than whatever the customers are buying from degree so it's a very promising segment.

In any energy system design the designer or the policy needs to address three main components, which are economics, environment and the reliability of the system.

When addressing these three main factors it is best to balance them although at the moment, the emphasis is being put on the economy, which makes sense as a growing country.

And much like continental Europe, which has a very well interconnected power grid, we are also embarking on an Asean power grid initiative with Singapore, Thailand and West Sumatra, as well as plans to link to Borneo.

There are also options for offshore floating solar installations that minimises the impact of land use, which all large-scale solar developers are concerned about.

