

The residential revolution: technologies fit for the new era of solar

Words: Florian Chan, Managing Director, Residential Line of Business at FIMER



Photo by Giorgio Trovato on Unsplash

Intersolar 2021 not only saw the return of one of the seminal global events in the solar industry it also provided the platform for FIMER to launch its revolutionary new inverter and storage solutions for the residential PV market, the 'Power' portfolio.

What was clear from the customers we spoke to at Intersolar, is that demand for residential solar PV plus storage is growing across many global markets, as homeowners seek to reduce their electricity bills, lower carbon

emissions and become more self-sufficient.

Indeed, the latest Renewable Energy Update from the International Energy Agency (IEA) forecasted that global solar PV additions will grow to 145GW in 2021, with residential

installations accounting for 27.2GW. In addition, the IHS Markit Residential Energy Storage Index predicts that installations in 2021 are expected to rise to 1.6 GW/4.1 GWh, representing a year-on-year increase



Florian Chan

highly attractive incentives schemes to encourage greater uptake of residential rooftop solar. For example, in Italy, where FIMER is based, the government has been very proactive, seeing investment in renewable power as a key part of its post-pandemic recovery plan. In May 2020, it launched a 'super-bonus' 110 percent tax break for homeowners who wanted to install solar - essentially meaning they could do it for free - and then earlier this year at a regional level, the Department of Environment, Energy and Sustainable Development of the Lombardy region allocated €20 million in rebates to promote the use of storage systems coupled with residential and commercial PV arrays, in addition to the €20 million it had already allocated in October 2020.

Similarly, in Germany – one of the leading markets when it comes to solar – Berlin has joined several cities by introducing new pro-solar legislation. The Berlin Solar Act mandates that from 2023 onward, rooftop PV systems will have to be installed on new buildings and buildings undergoing major renovations. It also states that, for properties with a roof that has a usable area of more than 50 square meters, at least 30 percent of the rooftop area has to be allocated for the deployment of PV systems.

Technology and electricity costs are reducing

As well as more incentives to encourage investment in solar systems, the overall cost of the technology itself is dropping, particularly when it comes to storage. New technologies such as LFP batteries have resulted in costs dropping rapidly. And, even in countries where incentives and subsidies aren't available, the falling cost of solar components has resulted in market growth. For example, in the UK, according to trade body Solar Energy UK, rooftop segments are now operating in a 'strong growth and

of 26 percent.

We can see this happening in multiple markets. For example, in Germany, there has been a huge 142 percent year-on-year growth in new residential PV systems thanks to an increase in the size limit of systems that are exempt from the country's renewable energy levy, which applies to systems from 10 to 30kW. There is also a prediction that 150,000 residential storage systems will be installed this year - a 42 percent increase on last year.

Similarly, in the US, the Solar Energy

Industries Association (SEIA) is predicting increased demand from homeowners wanting PV systems to be paired with battery storage, stating that nearly 25 percent of all behind-the-meter systems will be paired with storage by 2025, compared to under 6 percent in 2020.

So, what are the key drivers behind these figures?

Investing in solar is becoming increasingly attractive

Many global governments have introduced



sustained mode', with residential and commercial rooftop installations up 14 percent year-on-year, despite the removal of subsidies.

Linked to this is the reduction in the unit price of electricity across several markets. Figures from the International Renewable Energy Agency (IRENA) showed that since 2010, residential solar costs have fallen 47-80 percent, depending on the region.

Desire for stability and self-sufficiency is increasing

Being less reliant on the grid through self-generation is also a key driver for residential solar growth, particularly in those countries, such as the US and Australia, where grid stability is an issue due to unstable weather conditions and rural landscapes.

In addition, the highly volatile wholesale gas prices we have seen across Europe in recent weeks are set to have a direct impact on domestic energy users. Therefore, being able to reduce risk and protect against price spikes is making solar self-generation an increasingly attractive option.

Focus on reducing carbon impact

Of course, one of the overall drivers for switching to solar generation is a desire to reduce carbon emissions and the overall impact on the climate. There is a sense of pride in being independent from the grid and of contributing to a better world, which will

only increase as more consumers switch to electric vehicles (EVs) and install low-carbon smart home technologies.

Technologies fit for the new era of residential solar

To respond to this demand and global growth, there is a need for technology providers to offer a fully integrated, smart solar plus storage solution, that includes software and monitoring and has the capability to integrate other technologies such as EV charging stations.

In this growth market, it is also important that these technologies make the installer's life as easy as possible.

These were the key drivers behind the development of FIMER's latest innovative high-power inverter and high-capacity storage platforms, which offer future-proof and scalable solutions for all global installations.

The new 'Power' platform, which will be available from March 2022, includes the FIMER PowerUNO and PowerTRIO inverters and the PowerX storage solution, which have been designed to help installers by being the quickest and easiest-to-install solutions on the market.

The FIMER PowerUNO and PowerTRIO

Combining the latest technological innovations with high-end design features, the PowerUNO and PowerTRIO inverters offer a wide range of power choices from 2 to

8.5 kW and feature single and three-phase options to meet the demand of all global markets. They have one of the highest power densities on the market with a small and lightweight footprint, and key benefits include several easy-to-use plug and play connections allowing for a simple installation, making the installer's job as easy as possible.

It also has built-in high-end connectivity with Wi-Fi and ethernet, and Linux OS which allows local integration with smart home appliances and EV charging, as well as seamless interaction with FIMER's Aurora Vision cloud.

In addition, it has a dedicated blockchain processor which allows utilities and aggregators to build specific use cases on top of the inverter, avoiding the need for external devices. This approach reduces installation time and mitigates against cabling errors.

The FIMER PowerX

The FIMER PowerX offers the highest residential storage capacities on the market. Using a high-voltage modular battery format, PowerX has a maximum capacity of 48 kWh, providing a flexible option for requirements of all sizes.

It also benefits from a small overall footprint with a wall and floor stand – even at maximum capacity – and, with one module only weighing 33kg, it enables single person installation.

To further appeal to homeowners, FIMER PowerX provides the unique option to customize the curved front cover, bringing an Italian design flair to the technology by offering multiple colors to ensure the battery unit easily blends into its surroundings.

A new era for residential solar

In conclusion, it is an exciting time for the residential solar plus storage market. Projected strong growth, favourable political and regulatory environments, and increasing demand for low-cost renewable energy, mean that the market needs high-power, future-proof, flexible, and easy-to-install technologies to fulfil its potential.

With the 'Power' platform, FIMER's vision is to revolutionize the residential market for both installers and homeowners by combining best-in-class Italian design with cutting-edge technology. The new solutions meet the needs of homeowners both now and in the future, giving them the flexibility to add more capacity at any time, as well as being able to easily integrate with EV and home automation technologies.

That really is the new era of residential solar in action.

For more information, visit <https://www.fimer.com/power-platforms>