FIMER Headquarter

Shaping the future of solar

Following the acquisition and integration of ABB's solar inverter business, completed in the first quarter of 2020, FIMER took a decisive step forward in its strategy. Leonardo Botti, Head of Global Sales and Product Management explains how FIMER is shaping a new era in solar as digitalization will level the energy playing field, enhance Distributed Energy Resources (DER) operations and propel solar adoption.

Leonardo Botti

In a global scenario where the demand for renewable energy is constantly growing, solar has the power to shape new and progressive energy models for a sustainable world.

Recent reports indicate that, in the current climate, demand for renewable sources are holding their own with several MW investments taking place in territories such as Spain, South East Asia and the Middle East with solar being one of the principle energy sources.*

Thanks to its distributed nature, reliable performance and competitiveness, solar energy will continue this trajectory.

In the future, the energy market will experience a massive surge in energy diversification and solar will be a key power source supporting all business models effectively, including energy generation and distributed energy resources (DERs) to self-consumption and peer-2-peer (P2P) technology. Geographical limitations will also be reduced, as solar today is much more effective and viable even in areas where the sun irradiation levels are modest or in hilltop locations thanks to new topologies and advanced technologies which can boost energy harvesting.

FIMER's industrial 80-year heritage and entrepreneurial spirit to drive forward a new era in solar, has ensured that its expertise and tenacity is reflected across its new central and string inverter technologies for installers, EPCs and developers within residential, commercial and utility scale PV projects.

In this new era, FIMER will also focus on significant investment in R&D with product renewals and digitalization to increase the value and adoption of solar.

Energy sharing models

Today, the solar industry needs to pivot, and not only focus on how it can produce cleaner energy but on how it can be controlled, integrated and balanced through digitalization and artificial intelligence to create powerful energy sharing models.

The high penetration of PV combined with digital technologies, microgrids and advancements in storage are already causing a seismic shift in maximizing self–consumption through solar, boosting Virtual Power Plants (VPP) via the prosumer mechanism.

But we want to challenge the status quo and breakdown barriers in terms of interoperability. We want to explore new wave consumption and storage models which focus not just on feeding into the grid, but importantly adding value through smart energy management. Today and in the future, deeply controlling the energy flow will be a must as this will turn into efficiency and profitability of the complete system.

Open source technologies, compatibility and integration with legacy systems, as well as combining solar with other renewable energy sources will drive adoption among residential and commercial PV projects. The aggregation of multiple energy stakeholders in energy communities is already a reality and there is no doubt it will increase. At FIMER, we are investing heavily to support this direction with our smart string inverter solutions which are already deployed on several projects throughout Europe and rest of world.

Distributed Energy Resources (DER)

In addition to the growing prosumer movement, the increasing difficulty of grid operator codes in managing emerging Distributed Energy Resources (DER), is pushing the industry to adopt a smarter approach with more intelligence needed from an integrated smart environment.

DER projects are growing fast. By 2050, DER penetration is likely to be more than 60 percent of the energy market. Western countries are already paving the way, but other territories are following closely.**

Reduced environmental impact, lower emissions, greater grid flexibility, acceptance of energy storage and the rise of microgrid environments featuring solar plus other renewables, are delivering versatile and flexible energy options. And yet many of these projects are still creating significant challenges for grid operators with greater complexity to manage integration of renewable energy and build profitable business models as they transition.

Digitalization will ensure DERs provide safe, reliable and affordable power to their customers through agile management and system visibility provided by AI and IoT platforms.

To understand complexity and assure supply, grid operators will need to deeply integrate DER and look at the bigger picture. PV inverter solutions will play a key role at grid level as the inverters can work simultaneously as the local power converter and energy gateway to ensure seamless and best in class integration and system performance.

To further enhance system efficiency, grid operators need to interact and communicate seamlessly with inverters to correctly implement the demand response using digitalization. Peak shaving, ancillary services reduction and deferring transmission and distribution upgrades are just some of the achievements possible by demand response.

For utilities which have traditionally been focused on supply and demand, the growth of DERs, convergence of energy storage and renewable penetration provide viable opportunities to pivot and future proof business models.

Historically, utilities played the role of 'Energy Provider' in an almost monopolistic way, which is no longer valid thanks to millions of VPPs spread across all countries. In fact, utilities have changed and are adapting their business models, still supporting the end users but acting as 'Energy Service Providers' instead.

Greater yields, faster deployments

Through digitalization, utilities can now manage the demanding performance expectations and increasing complexity of modern energy systems that will form the smart grids of the future.

There are already several benefits for customers and system integrators using digital management platforms including improved operational performance, efficiency and productivity through enhanced uptime, speed and yield.

With greater yields, quicker project deployments in days and not just weeks, along with greater demand, it is fair to say that digitalization in solar has a bright future.

Have you started to enhance your inverter solutions through digitalization? Are you looking to introduce digitalization? What are the challenges you are facing? We would like to hear your thoughts on how we can shape a new era for solar together as we look to support and answer some of those questions with our solutions.

* https://www.ft.com/content/205e5a30-4aba-4b9e-b27d-cc8a654ff684

** https://arena.gov.au/blog/what-are-distribute-energy-resources/

www.fimer.com