



The wait is over

A new generation, of highly flexible modular energy storage solutions, finally overcomes the standby mentality of the energy storage market. PES caught up with Alvaro Garcia, Managing Director of Storing Renewable Energy Ltd, part of EFT Group, official service partner for BYD B-Box in Europe, about the energy storage market trends visible at Intersolar Europe and BYD's B-Box storage series.



Alvaro Garcia

PES: Welcome to PES Solar magazine. We didn't have the opportunity for a catch-up at Intersolar as it was really busy, so it's great to have the opportunity to catch-up now. Energy storage has been one of the key topics at Intersolar Europe for the last four or five years – so what changed?

Alvaro Garcia: I guess nobody in the industry would deny a connection between the development of the solar energy market and the evolution of energy storage solutions. 2017 was the fourth year EES Europe was held in parallel with Intersolar, which also reflects the close relationship between the two markets. Nevertheless, the development of energy storage implementation has been rather slow.

To quote Maroš Šefčovič, the European Commission VP in charge of the Energy Union: 'The role and importance of storage have been underestimated for too long.'

Matt Roberts, executive director of the Energy Storage Association (ESA) recently said: 'Storage technologies demonstrated to be safe, reliable, and cost-effective. (...) now it's about application of solutions. On that issue, we're close to an inflection point – with everything required for major shift in energy systems through introduction of energy storage.'

PES: So do you think we have reached this inflection point and what were the reasons for the slow pick-up in the market?

AG: In the last few years we have witnessed the energy storage market gaining momentum, with new players and a wider variety of solutions. However, both end customers, as well as installers appeared to remain in a 'wait and see' position. This was not the only reason; they also wanted to see if prices were going to drop any further.

End customers found it very difficult to choose a storage system as it is very hard to predict how their requirements would change over the course of the next few years. In the future they might want to consider expanding their rooftop system, add another PV system to their car port or maybe look at integrating an electric vehicle. So an investment into a small system might be wasted if they needed to exchange it in the near future. Paying for a big system, which may or may not be able to fulfil future demands, didn't seem like an appealing option either.

Installers on the other hand were faced with the challenge of having suitable systems for a multitude of application scenarios with different needs – from light to heavy electrical load usage, off-grid or on-grid, single-phase or three-phase applications. Being able to provide different storage systems for all these scenarios would mean a large investment in cooperation, with a variety of vendors, training for all the different solutions etc.

During the last year however we saw the evolution of a new generation of energy storage solutions. These are modular and highly flexible and so they can be expanded and scaled up to meet upcoming storage demands.

This way end customers can start with a small investment which will also not be wasted if the system has to be expanded in the future. Installers can now fulfil a multitude of application scenarios with one solution group, which makes training much easier and enables them to meet all customer demands.

For me this is the development marking the long awaited inflection point in energy storage application.

PES: Can you give us an example of the key features of these modular systems?

AG: Sure. The B-Box series by BYD for example provides both a low voltage and a high voltage system line with a highly flexible modular design.

The latest addition to the series, the high-voltage model B-Box HV, offers battery capacities ranging from 5.6 to 10.08 kWh, providing more than enough energy for the average household and can be scaled up to 50kWh for commercial and industrial applications.

A patented innovative connection system allows for an extremely easy plug-and-play installation without the need to connect cables. So installers simply stack battery modules like Lego blocks to reach the required capacity. The modules are then safely connected with a simple turn of a mounting key and after a minimum installation time, the whole system can be connected to the inverter.

Another key advantage of the high-volt storage system: the energy is already close to the voltage level of the grid, so conversion losses are minimised and the system is even more efficient.

The low voltage system B-Box LV 10.0 is available in four capacities, ranging from 2.5 to 10.0 kWh and can be scaled up to 80kWh when multiple boxes are connected in parallel. The B-Box LV 12.8 can reach a maximum capacity of 409 kWh, providing plenty power for an energy-intensive medium-size business.

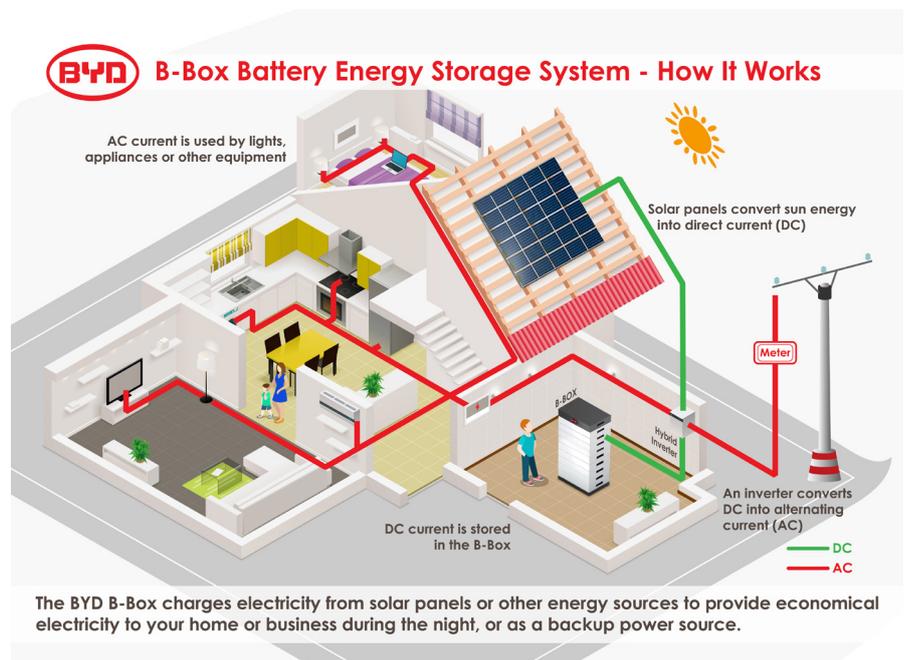
The modular design concept and smart battery management system of the B-Box series provide flexibility to meet customer needs, with initial investments in a system capacity, covering their current demand but allows convenient extendibility to increase power capacity throughout the product's

lifetime and for all future applications.

Resale partners and installers particularly value the fact that they can meet a wide range of application fields with one system, which is also extremely easy to install.

PES: Your teams at SRE and EFT provide the local after sales service and training for B-Box throughout Europe. Why did you chose BYD as your storage solution partner?

AG: BYD is the world's largest provider of integrated renewable energy solutions and the only company that specialises in four comprehensive industries including solar modules, energy storage systems, electric vehicles and rail transportation. This way they aim to address the complete energy eco system to reach a zero emission, eco practice.





The B-Box uses the same high-output, completely recyclable, long-lasting lithium iron phosphate (LiFePO₄ or LFP) battery chemistry and control technology that has safely powered BYD's electric vehicles for more than seven years, meeting stringent automotive and railway application standards for safety, including TUV, UL and RCM.

For us it is a major advantage that the battery technology has already been proven to work efficiently over a longer period of time – which is not the case with many other solutions in this relatively young market.

In addition, being the world's largest provider of electrical vehicles, BYD can bring its vast experience from this market, as many industry experts view the integration of e-vehicles as a major future step in the evolution of the energy storage market.

Bloomberg New Energy Finance anticipates over 100 million electric vehicles on the road worldwide by 2030 and the integration of e-Mobility and PV energy storage was therefore also a key topic at this year's ees Europe conference.

Analysts such as 6W Research's Ravi Bhandari confirm that in addition to self-consumption the growing popularity of solar plus storage systems in the residential sector along with integration of renewable energy sources in grids are key factors that will drive the energy storage systems' market in Europe. 'Germany and the United Kingdom are the two biggest markets in Europe for Energy Storage Systems due to

increasing tenders for energy storage and rise in electric vehicle usage', Ravi said.

So to summarise: for us it was a combination of a proven storage technology, BYD's battery knowledge as well as in the e-mobility market, the stability of the company as one of the top players globally and the features of the systems itself – the flexibility and scalability, as well as the easy installation were key factors.

PES: What drivers do you see for the future evolution of the energy storage market?

AG: I believe another key real driver of growth in the storage market will be grid services. The main benefit of batteries is the flexibility they offer by allowing the grid to break the energy supply-demand relationship in time. For this aspect the modularity of storage systems is very attractive as it allows users to install a self-consumption system for their home first and then add additional modules should there be attractive incentives paid for battery capacity in the future.

Based on the country and energy supplier these initiatives might be structured differently. The main idea however is to get paid to make battery power available at peak demand times. While in the past only large storage asset owners could participate in these schemes, recent advances are now allowing homeowners to participate, as some energy suppliers have the ability to aggregate hundreds or thousands of devices to create virtual

power plants. The home owner in general would get a flat fee per year in exchange for control over part of the battery capacity.

In my opinion this is a way that might help to solve one of the main challenges to provide a reliable energy supply despite the fluctuation often related with renewable energy sources.

PES: Do you think Brexit will have an impact on the PV/energy storage market?

AG: At this point, we still don't know what 'Brexit' will look like for our industry. Despite initial reports forecasting a potential negative impact to the economy, it will be hard to slow down the growth of renewable energy technologies.

With electricity prices expected to rise and equipment costs conversely decrease, the energy storage market will continue its healthy growth.

PES: How has the year been so far for EFT/SRE?

AG: 2017 has been very exciting so far. Both in Germany and the UK, we have seen positive results coming from the training and development efforts of 2016.

Furthermore, the launch of the B-Box H has been very well received in the market, and as a result, brought strong momentum to the BYD brand. We are also glad that this momentum has strengthened the growth of both our distribution and inverter partners.

www.srenergy.co.uk/en/

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