Solving India's energy storage challenges one innovation at a time

Over the course of seven years, Grinntech Motors and Services has firmly established itself as the major battery manufacturer for EVs and grid storage battery technologies in India. ETN spoke to Punnet Jain, cofounder of the li-ion battery technology company which has been at the forefront of driving electric revolution in India.

Q: You along with Nikhilesh Mishra founded this start-up and it was incubated in IIT-Madras to use technological innovations to boost electric vehicle revolution in the country. How would you describe your journey since 2013?

A: Nikhilesh and I have been working in the area of EVs since 2012. We incorporated Grinntech in 2013. The name Grinntech stands for "Green Innovations in Technology". Our initial years were spent in understanding the EV industry and how it will go forward in India. We realized that the backbone of India's electric vehicle revolution will require technology that is developed indigenously for our unique terrain and temperature requirements. The vision of the company has since evolved and been honed to be a critical piece in India's energy transition. In 2017, Grinntech was incubated in the IIT-Madras Incubation Cell where we built lithium-ion based Intelligent Energy Storage technology for automotive as well as stationary applications. Our 2-wheeler and 3-wheeler battery packs have been a part of extensive pilots which have covered well over 2 lakh kilometres. Our range extension e-car battery is also in the POC stage. Our battery packs are developed based on data collected in real time pilots making our packs effectively designed for Indian terrain and temperature.

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cofounder
Grinntech Motors and Services

Q: What have been some of the major challenges you were faced with in India in the process of becoming a leading lithium battery technology provider?

A: During our initial years, the EV industry did not exist in India. There was a lot of skepticism over how EVs would evolve with some even doubting that EVs would take-off in India at all. Once it became more and more clear that India was headed the EV way, economics became the next hurdle to adopt. However, we continue to see misinformation being spread via various channels about the technology and the capabilities of lithium-ion battery packs. The industry also has to deal with lower quality imported battery packs which are skewing customer expectations. Above all, we had to deal with skepticism that technology for Indian needs could be developed in India.

Q: How did you overcome these hurdles?

A: All our initial products were made for swappable applications since we saw that this would be the way to encourage faster adoption. The introduction of the FAME II scheme has helped mitigate many hurdles such as economic viability and is helping build an ecosystem for indigenous design and production. We believe that for India to be a major player in the world EV market, it is not enough to make in India – we must also design in India. At Grinntech, we have in-house

expertise in all design aspects of the battery pack – mechanical design, thermal management, electrical safety and the battery management system. We have spent a lot of time and resources in characterizing various cells available in the market and are able to build a battery pack with guaranteed long life and performance.

Q: Today Grinntech has emerged as a major battery manufacturer for EVs and grid storage battery technologies. What are your views on the potential of energy storage industry?

A: Lately, India has shown huge potential for various use cases of ESS not limited to off-grid electrification, microgrid, grid storage, grid stability etc. Large consumer base, lack of affordable energy access and focus on adoption variable renewable energy resources provides multiples use cases and opportunities which can be scaled in the Indian market. Cost of several ESS technologies have been constantly on the decline in the past few years, but it is only lithium-ion batteries have reached the inflexion point of becoming commercially viable. This has caught attention of regulators, electric mobility, power companies, and discoms. A large market like India embarking on adoption of ESS and electrification of mobility in a big way with a clear roadmap, would send the right signals to the industry to invest in a local capacity that will help reduce the cost of ESS.

Q: What's the plan for 2020? What is your vision for the company moving forward?

A: In 2020, Grinntech will be releasing our flagship family of 2W battery product line with 48V, 60V and 72V variants. With these products, we will be reaching an energy density of almost 300 wh/lt and seven-fold computing power. This will be an entire product line of intelligent connected batteries which we will launch with cutting edge Qualcomm technology. We will also be releasing our e-rickshaw battery pack which works on a 48V platform. We will continue our R&D on battery packs for bus and car. We are working on co-development projects with OEMs which leverage our in-house design expertise and efficient go to market timeline to enable OEMs to develop robust and affordable products made for Indian terrain and temperature.