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Will BCD Slowdown Solar Business in India?

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Commenting on the disruptions caused by the announcements of basic customs duty and PLI benefits, energy experts express optimism in the face of displeasure about the growth of the solar business in the coming years.

Innovations at VJTI-TBI – Adding value to the Startup ecosystem

Veermata Jijabai Technological Institute in Mumbai has set up the Technology Business Incubator (VJTI-TBI) to support startups focusing on various aspects of EV.



New-age entrepreneurs are entering the EV market with new business models and introducing innovative technologies to automate agro-produce harvesting, promoting personal mobility and introduce last-mile micro-mobility products, etc. Dr. Faruk Kazi, Principal Investigator at VJTI-TBI, talks about VJTI's incubator set-up and how it is successfully supporting promising start-ups in the electric domain.

According to a market report, India has sold more than one million electric vehicles in the last two years. According to Mordor Intelligence, the Indian EV market was valued at \$5 billion in 2020 and is expected to reach \$47 billion by 2026 registering a CAGR of above 44 percent during the forecast period (2021-2026). However, the EV market in India is still considered to be in a nascent stage but is expected to grow at a much faster rate due to various government initiatives, including the implementation of the FAMEII Scheme and promotion of EV products and associated industries. In recent times, a significant contribution to this sector has come from not only traditional manufacturers but also start-ups.

Considering these encouraging trends, the prestigious **Veermata Jijabai Technological Institute in Mumbai set up the Technology Business Incubator (VJTI-TBI)**, to support startups focusing on various aspects of EVs including technology, innovation, and business models. Set up in 2017 with the support of the Department of Science and Technology, government of India, under the NIDHI-TBI Scheme, The VJTI-TBI Board of Governors comprises of the following members Dr. Dhiren R Patel (Director, VJTI), Dr. Naveen Vasistha (Scientist F and Member, NSTEDB Secretariat, DST), Vikas Chandra Rastogi (Principal

Secretary, DHTE, Govt. of Maharashtra) who have been instrumental in the successful implementation of the VJTI-TBI. It was created as a platform for supporting ambitious entrepreneurs and startups in the country focusing on thematic areas including energy, cleantech, EV, IoT, AI/ML and cybersecurity of critical infrastructure. The incubated start-ups are provided with co-working space, access to state-of-the-art lab infrastructure (SCADA & Automation Lab, Power Electronics Lab, and AI/ML and Embedded Systems Lab) equipped to test products and prototypes in the domains mentioned earlier. This incubator is already supporting around 30 start-ups, and was recently named 'Smart Incubator of the Year' at ISGF Innovations Awards 2020. In addition, VJTI-TBI provides advisory services in business management, IPR, finance, and accounting, legal and technical domains through collaborations with third-party service providers and industry associations. Incubated start-ups also get access to free tools including AWS credits, ZOHO platform, Zendesk CRM, SOLIDWORKS licenses, MatLab and Simulink licenses, and MyOperator cloud telephony credits.

VJTI-TBI has also partnered with several corporates (Larsen and Toubro Infotech (LTI), Emerson, NVIDIA, Siemens, and CISCO) and industry bodies (India Electrical and Electronics Manufacturers Association, Cyber Peace Foundation, The Institute of Engineering and Technology, India Energy Storage Alliance, and India Smart Grid Forum) to support the start-ups through mentoring, funding, and infrastructure (including lab infrastructure). Start-ups are provided with seed support through CSR partnership with LTI, ITD Cementation India, SIDBI Capital Ventures, and Technotalent Engineering India. Following are some of the promising EV start-ups incubated at VJTI-TBI. **Mag9**



Energies Pvt. Ltd. Sunit Shah, Nikunj Shah, and Vikas Gupta co-founded Mag9 Energies (previously Magnes Motors India) with the sole purpose of providing micro-mobility services in the EV segment. The Team under the Magnes Motors brand was one of the first to offer an electric go-kart for the amusement parks in the country. Later, they also focused on developing a dirt bike for the amateur sports industry and have already developed a prototype of an electric delivery 2-wheeler for the logistics sector. Mag9 Energies has generated revenues of ₹1 crore from the go-kart product line and has also introduced an e-bike recently. These e-bikes will soon be made available on the VJTI campus as a part of their gogreen initiative. Mag9 Energies have been selected as finalists in STPI Motion and other reputed incubation programs in the country focusing on EV development. **PMV Electric Pvt. Ltd.** PMV (personal mobility vehicles), is currently developing its flagship product, EaS-E, an electric smart car for everyday use with a focus on sustainable personal mobility; to address the global challenges of pollution, climate change, urban congestion and parking issues. The two-seater fully electric smart microcar will have some top-of-the-line benefits like cruise control, a feet-free driving mode in traffic, remote parking assist, over-the-air updates besides the regular air conditioner, music system, navigation, safety seat belts, etc.

JyoSH AI Solutions Pvt. Ltd. JyoSH Agriculture Integrated Robot is an EV-enabled and AI ML technology-based smart, precision farming solution for entire automation cotton cultivation, which includes weed management, crop health monitoring, and cotton harvesting. It improves the productivity and profitability of cotton farmers by saving labor and chemical costs. JyoSH AI robot is also designed to automate the cultivation of other fruits and vegetables as well. The co-founders, Dr. Sharadchandra Lohokare and Jitendra Ahirrao, have a combined experience of over 50 years in mechatronics, product development, AI/ML, and program management. JyoSH AI Solutions are the winners of the Agri India Hackathon held in Feb 2021 under the 'Farm Mechanization' category. They have also been selected for NIDHI PRAYAS funding and by NASSCOM for DTC (Deep Technology Club). Mag9 Energies, PMV Along with Electric, and Jyosh AI Solutions, VJTI-TBI expects to support more EV-based

start-ups in the future cohorts. With the right support of lab infrastructure, training, mentoring, and fundraising, the incubated start-ups can definitely aim to take their tech-based product/ service to the next level.

VJTI-TBI has more than 25 Start-ups currently under its umbrella in the domains of Electric Vehicles, Cleantech, Agritech, AI/ML etc. In the process for the next round of Startup onboarding the Business Pitch event was conducted from 07th -10th March! More than 20 Start-ups presented their pitch to the Panel of Jury Members. Of these 20 VJTI-TBI will be selecting Top 10 Startups to be incubated in the year 2022-23 in the domains of Deep Tech, Computer Security, AI, ML and Cleantech.

Some of the other Start-ups incubated under VJTI-TBI include Blockeye Technologies (They are experts in the Design, development and pilot deployment of Blockchain based applications in the domains of Governance, Banking & Finance and Cyber Security.), Aidgo technologies (They are generating awareness for the adoption of technologically advanced assistive devices. They make affordable electric wheelchairs and the best custom lithium battery packs for the electric vehicle industry to accelerate the transition to a cleaner economy. The zeal for implementing technology for the upliftment of society brought the co-founders Dr Chetan Kamble and Dhanshree Thulkar together. Being an entrepreneur and a researcher, this venture helps us serve a humanitarian need and satisfy our scientific quest, **FarmChain** (FarmChain is a technology based start-up. They are developing solutions for a complex supply chain of farm products and enabling small farmers to compete in various market segments by providing them a platform for creating transparency while directly selling to customers), Coming from a farming background Bala Surya and Ajith Kannan, cofounders of Sand Bird took this as their lifetime goal to ease the efforts of low-income farmers with clean and smart farming operations, Monter Technologies is a start-up passionate about solving climate change problem through its innovative cost effective and patented products, PMV Electric is a Mumbai based personal mobility EV start-up, developing India's First indigenously developed smart microcar.

VJTI-TBI is providing a great impetus to the Start-up Ecosystem through the support from lab infrastructure, training, mentoring, and fundraising. Thus the Incubated start-ups can definitely aim to take their tech-based product or service to the next level with the help and support from VJTI-TBI. ⚡

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