MOBILITY INDUSTRY INSIDER

May ’ 20 Bulletin

Quick & Wireless Charging

What’s inside ?

- Major development related to Quick and wireless Charging
- Spotlight on Urban Electric trial on EV pop up charging
- Spotlight on Ford’s new patent for an inflatable, solar-powered, EV-charging car shield
- Spotlight on China’s new national standards for wireless EV charging

FutureBridge

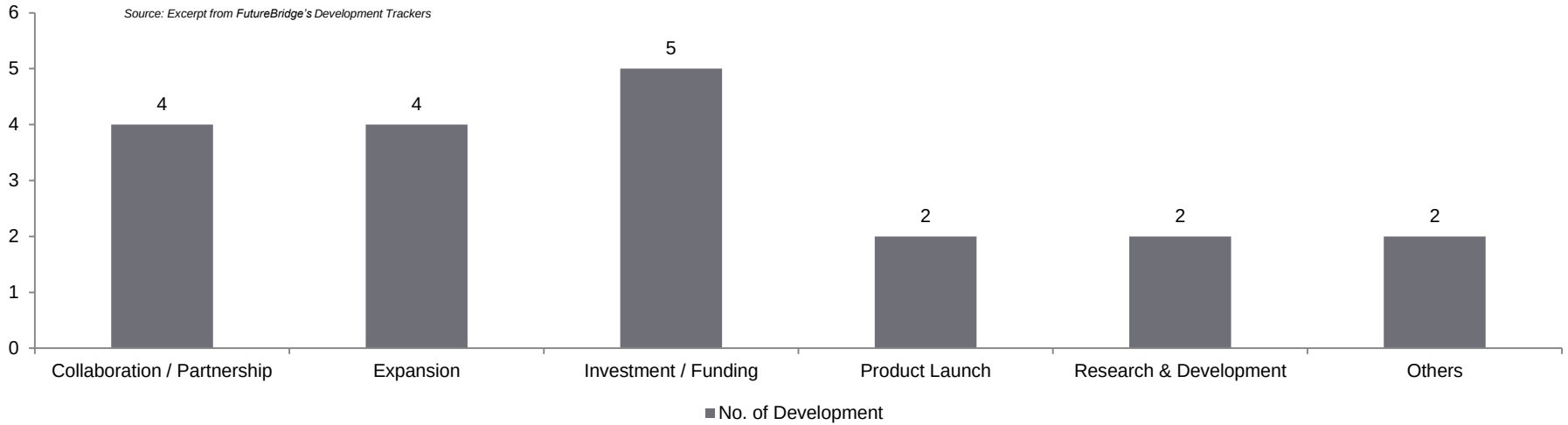
MOBILITY INDUSTRY INSIDER

What's Inside?	Key Takeaways
01 Industry Development Summary in May'20	• There were increased developments in the investment and funding activity followed by the expansion and collaboration strategy
02 V2G as a core area, of interest in EV charging	• FCA and Engie started working on their largest V@G project which claim to accommodate 700 vehicles at a time • Smart Grid solution have crossed an investment of £20 million in its R&D project
03 Wireless Charging is gaining pace as a more convenient way to charge the EVs	• Hevo is aiming to commercialize its wireless charging by this year. The product is about to enter low-volume production at the Flex contract manufacturing facility in Austin, Texas and will serve the 200 unit orders HEVO received in the first quarter
04 Roaming Networking easing out the charging option for EV	• Octopus Energy forms EV roaming network . With the new roaming service EV drivers can access multiple charging networks with a single Octopus account
05 Spotlight on Urban Electric trial on EV pops up charging.	• Urban Electric is working on pop up charging point to preserve the urban streetscape. It has completed the test of its UEone prototype EV charger on-street charging hubs in Oxford
06 Spotlight on Ford's new patent for an inflatable, solar-powered, EV-charging car shield	• Ford patented an application for a roof-mounted device that, with a flip of a switch, cocoons the entire parked vehicle in a shield of solar panels.
07 Spotlight on China's new national standards for wireless EV charging	• Standardization will help in large-scale deployment of wireless charging for EVs both in China and across the world, thus allowing any equipped EV to use any standard wireless charger..

Industry Development activities in March 2020

In May we saw a lot of Investment and funding happening followed by various expansion strategy by the network providers and the OEMs

Types of Development



Key Players

FIAT CHRYSLER AUTOMOBILES

- Expert says -

"On average, cars remain unused for 80-90% of the day. During this long period, if connected to the grid by Vehicle-to-Grid technology, customers can therefore receive money or free energy in exchange for the balancing service offered, without compromising their mobility needs in any way. In addition, this project forms part of a broader context of the technology partnership that has stood between ENGIE Eps and FCA since 2016. The main, tangible objective of this partnership is to reduce the cost of FCA electric vehicle lifecycles, via specific offers exclusive to our customers."

— *Roberto Di Stefano, Head of EMEA e-Mobility at FCA*

FCA and ENGIE to start working on their V2G plant

FIAT CHRYSLER AUTOMOBILES

- ENGIE and FCA first announced this project in September 2019 along with Italian grid operator Terna.
- The infrastructure will be ready by 2021 with a capacity to connect 700 EVs

Analyst Comment

- V2G technologies utilize bidirectional charging to channel back the power to the grid thus helps in providing the ease out the electricity demand and providing the essential grid service.
- The initiative is aimed to be in between FCA's electric vehicles and the power grid. In addition to recharging the cars, the project will use their batteries to provide grid stabilization services.

Read this story

Smarter Grid Solutions invested heavily in its smart grid projects

- SGS has already invested £20 million in its R&D project, in New York and California.
- The project will help grid operators to tackle the climate emergency and move towards net zero carbon dioxide emission targets.

Analyst Comment

- In Europe SGS is working with UK Power Networks to connect more distributed energy resources (DERs) such as renewable energy devices and batteries to its grid.
- The firm is also working with Scottish & Southern Energy on an innovative "energy as a service" platform, and with SP Energy Networks on EV smart charging and also for fault level management project that will allow more DERs to be connected to existing network infrastructure, evading more costly grid upgrades.

Read this story

octopus

- Expert says -

"Octopus's Electric Juice Network doesn't just consolidate charging costs, it adds them to your Octopus Energy bill if you're an existing customer. For non-Octopus customers, you can still use the service to ensure you're able to track (and pay) in one simple way"

— *Greg Jackson, CEO and founder of Octopus Energy*

HEVO to launch US manufacturing for wireless electric vehicle charger

HEVO

- Hevo is aiming to commercialize its wireless charging by this year.
- A ground-mounted pad that beams electricity up to a car-mounted receiver to wirelessly charge it.
- The product is about to enter low-volume production at the Flex contract manufacturing facility in Austin, Texas and will serve the 200 unit orders HEVO received in the first quarter.

Analyst Comment

- With more plug-in electric vehicles in the market, EVs are leaving the early adopter stage and becoming mainstream fixtures on U.S. roads
- Wireless charging makes the recharging process of an electric vehicle more convenient, simple, and hassle-free.
- OEMs like Toyota, Hyundai, Nissan, and others are also working on wireless charging systems, and some of the key research and testing are also taking place at the department of energy's Oak Ridge and Idaho national labs.

Read this story

Octopus Energy forms EV roaming network

octopus

- With the new roaming service EV drivers can access multiple charging networks with a single Octopus account.
- The network launches with Char.gy to provide great inner-city coverage, with more partners joining shortly

Analyst Comment

- The roaming agreement helps in easy access to the charging infrastructure thus help in improving the switch to e-mobility for drivers.
- At the end of 2019, a similar roaming agreement signed by Allego, EVBox, New Motion, Chargemap, ChargePoint, Charge4Europe, Engenie, Franklin Energy, and Travelcard in the UK.
- Better roaming access to charging infrastructure will also lead to more competition and product innovation. Ultimately creating a better user experience for drivers with improved applications.

Read this story

FutureBridge

Urban Electric completes the trial of its pop-up EV Charger

urban | electric

- Urban Electric has completed the test of its UEone prototype EV charger on-street charging hubs in Oxford
- The trial includes Oxford City Council, Co-wheels Car Club, and product design agency Duku. The partner installed six charging points, with 7kW got retracted when not in use.

Source

Urban Electric charging

- Urban Electric is working on pop up charging point to preserve the urban streetscape.
- Currently undergoing trials, commercial production is planned for 2021.
- Zero cost to Local Authorities for supply, installation, operation & maintenance

Analyst Comment

- The city of Oxford has been awarded £474,000 (589554.09 USD) for becoming the first city to try pop-up' on-street electric vehicle charging points in 2018 . Residents of Oxford were said to nominate their streets where UEone charger got installed. The trial scheme was available for those residents who have EVs or those who want to buy it.
- The British EV charging startup Urban Electric has completed the trial of its UEone prototype charger, which is a pop-up charger specifically designed to solve the problem of at-home charging. A survey found that about 43% of UK households don't have access to off-street parking, which is one of the main hindrances for the adoption of EV. The design of this charger is primarily for the convenient roadside charging of the vehicle parked for long hours. The charger is fully retractable underground when not in use, minimizing its impact on the urban environment.

China's new national standards for wireless EV charging

WiTricity

- The China Electricity Council has come up with a set of national standards that incorporates WiTricity's patented technology for wireless EV charging.
- Standardization will help in large-scale deployment of wireless charging for EVs both in China and across the world, thus allowing any equipped EV to use any standard wireless charger.
- The testing requirements for CHAdeMO 3.0 specification are expected to be issued within a year. The first ChaoJi EVs will be likely commercial vehicles and expected to be launched in the market as early as 2021, followed by other types of vehicles including passenger EVs

Source

Standards

The new National GB - Standard declared are –

- GB / T 38775.1 "Wireless Charging System for Electric Vehicles Part 1: General Requirements"
- GB / T 38775.2 "Wireless Charging System for Electric Vehicles Part 2: Communication between On-board Chargers and Charging Equipment"
- GB / T 38775.3 "Electric Vehicle Wireless Charging System Part 3: Special Requirements"
- GB / T 38775.4 "Electric Vehicle Wireless Charging System Part 4: Electromagnetic Environment Limits and Test Methods"

Analyst Comment

- After the crisis of COVID-19 China, one of the biggest EV charging network providers is trying its best to pace up with its plan of the EV charging network. Earlier China declared funding for the expansion of its EV charging Network , China along with CHAdeMO Association has come up with new standards CHAdeMO 3.0
- WiTricity technology one of the leading players of wireless charging has been working China Electric Power Research Institute (CEPRI), China Automotive Technology and Research Center (CATARC) and the China Electricity Council (CEC) for standardizing the EV charging process in China

Ford filed a new patent for an inflatable, solar-powered, EV-charging car shield

- Ford patented an application for a roof-mounted device that, with a flip of a switch, cocoons the entire parked vehicle in a shield of solar panels.
- The patent application got first filed by FORD on November 8, 2019.

Source

Ford's recent development in EV charging

- Ford Mustang Mach-E EV improves charging time by ~30% >>
- BYD to supply EV batteries to Ford >>
- Ford submits patent application for daisy chain of mobile EV chargers >>
- Centrica pens Ford EV charging deal >>
- Ford introduces new charging service plans >>
- Ford Files Trademark For Fastor Charge EV Charging Network >>

Analyst Comment

- The New Patented application of Ford is a rooftop-mounted shape-shifter with an auto-covering fabric with flexible thin-lay solar cells controlled by a central shaft arranged on a rear bumper or in a luggage compartment. It can be unfolded using an inflation pump and is self-powered from the system's stored solar power.
- In 2014 CES, Ford has unveiled the concept of solar rooftop C-Max Solar Energi Concept that tracks the sun's movement and uses a Fresnel lens to concentrate its energy to charge the vehicle. With global EV purchases forecasted to rise to 10 million by 2025 from approximately 2.3 million in 2019, demand for electricity will increase.
- Renewable energy can be used cost-effectively for EV charging infrastructure, like solar or wind. This will not only help in decarbonizing the transport but will also help in reducing fuel import dependence and also in adopting new approaches to mobility. Not only Ford but other OEMs like Toyota, Hyundai, Nissan, and Tesla are pushing into using rooftops to solar-charge an EV or hybrid

North America
55 Madison Ave, Suite 400
Morristown, NJ 07960
USA
T: +1 212 835 1590

Europe
328-334 Graadt van Roggenweg
4th Floor, Utrecht, 3531 AH
Netherlands
T: +31 30 298 2108

United Kingdom
5 Chancery Lane
London EC4A 1BL
United Kingdom
T: +44 207 406 7548

Asia Pacific
Millennium Business Park
Sector 3, Building # 4, Mahape
Navi Mumbai 400 710
India
T: +91 22 6772 5700