

ALL CHARGED UP

That if you build it and they will come is most definitely Greenlots' creed. The Singapore-based cleantech start-up, which specialises in charging solutions for electric vehicles (EVs), hopes that with proficient charging infrastructure in place, more people around the world will embrace EVs. Product manager Terence Siew and field operations manager Richard Chee, who both joined Greenlots shortly after it was founded by technopreneur Ron Mahabir, believe that Singapore is the best place to make this happen, thanks to its small size and reliable power grid. AS TOLD TO JACQUELYN CHEOK



TAKING CHARGE
Terence Siew (left) and Richard Chee (right) see EVs becoming cheaper in the near future

WHAT IS GREENLOTS?

Terence: Greenlots was founded by Ron Mahabir in 2008 in Singapore. The name is actually a combination of two words: “Green”, which refers to environmental sustainability; and “lots”, which refers to parking lots for vehicles. Together, the name represents our vision to be a leading driver in promoting electric mobility.

Our founder, Ron, was previously based in Singapore during the early founding years, but now spends most of his time in the US at our offices in San Francisco and Los Angeles. Ron is also the founder of Asia Cleantech Capital, which is focused on investments in the early-stage clean energy and sustainable transportation sectors, and also one of Greenlots' investors.

Interestingly, the company started out as Zeco, with “Ze” standing for zero emissions, and “co” referring to carbon dioxide. We wanted to promote electric scooters as a sustainable form of transportation. But we found that it was difficult to sustain the industry when there was insufficient charging infrastructure around. It became a chicken-and-egg problem. So we decided to go into providing the charging infrastructure. For EVs to take off, there needs to be adequate charging stations around, just like how petrol stations are needed to fuel petrol-engine cars. In short, Greenlots works with property owners and developers to install EV charging stations at their premises.

Richard: These stations are mostly found in basement

parking lots at malls and offices. Typically, it takes three to four hours for an EV to get charged up to 80 per cent, which is the average time most people spend at malls. At offices, where people park their cars for longer, six to eight hours, that is more than sufficient time for their EVs to get charged.

Terence: In 2001, together with Bosch eMobility, Greenlots won the tender to provide charging infrastructure for the Singapore EV test-bed. That was the first nationwide EV test-bedding project, and it set out to test the feasibility of using EVs powered completely by electricity. Many government bodies such as the LTA (Land Transport Authority), EMA (Energy Market Authority), EDB (Economic Development Board) and URA (Urban Redevelopment Authority) were also involved as participants. The project successfully concluded in 2013, and it is expected to go into a second phase this year with much more EVs on the road.

WHY HAS EV TAKE-UP BEEN LESS THAN STELLAR THUS FAR?

Richard: At present, there are over 120 EVs on the roads here. These drivers are mostly the rich, or people who wish to make a statement about being environmentally friendly and reducing emissions.

Terence: As not many Singaporeans have driven an EV before, there is some misconception that EVs are slow, boring and inefficient like golf carts. But that is quite far from the

truth: many EVs have a good acceleration, and are extremely quiet. City driving with an EV is also more efficient because of the ability to recharge batteries during braking. Also, since the average daily driving distance of most Singaporeans is 55 km, there is more than enough range to last through an ordinary day. EVs are able to reach a maximum of 115 km based on one full charge in normal road conditions.

The low take-up also arises from the high cost of these vehicles – for about the same price, people know they can get a BMW 3 Series, so why get an EV? Most people too, lament the lack of charging facilities around.

Richard: In Singapore, we have over 100 charging stations, of which about 70 are owned by Bosch, and about 30 are Greenlots'. Both types follow the same prevailing global standards for charging infrastructure. While Bosch's stations are mostly found in government buildings and open to only test-bed participants, Greenlots' – found in centralised locations such as Marina Bay Sands, Orchard Gateway and One Raffles Quay – are open to anyone as long as they are registered with us.

Terence: More recently, Greenlots was selected as the official charging solutions provider for BMW i in Singapore. This means the customer will have a charger installed in his home; and when he's outside and needs an extra charge, he can visit any of the 30 public chargers that are located across Singapore.

Greenlots also runs one of the largest DC (direct current) fast-charging networks in North America and has won major projects piloting smart-grid enabled charging with utilities. Compared to AC (alternating current) charging which takes more than three hours to get a full charge, it only takes half an hour to completely recharge an EV via DC charging.

In the meantime, catering to a small audience allows Greenlots to work on providing these first adopters with a good experience, which is a good strategy. We aim to fine-tune this experience for the masses in time to come.

Unfortunately, some building owners are not so keen on EV charging facilities. For one thing, dedicating a parking lot for EVs (where a driver can park and charge his car at the same time) means one less lot for normal petrol-run cars, and that will impact parking revenues.

Richard: Vandalism is also a concern for us. We once had a charging machine in a carpark completely pulled out, even though that required a lot of strength and there was a CCTV monitoring the parking lot. That cost us about S\$400.

Terence: Nonetheless, we see EVs becoming cheaper in the near future. With more tech players in the market and economies of scale, even battery makers are manufacturing new battery types that can recharge faster. All of this will go towards making the industry more efficient and sustainable.

WHAT ARE GREENLOTS' PLANS FOR THE NEXT FIVE YEARS?

Terence: We will continue to work closely with building developers, premises owners and other technology partners to grow and expand the local EV charging network. Our aim is to make charging as simple as possible. If this can be achieved, drivers will feel confident in using EVs for their everyday commute, without having to worry about their charging or range. And we think Singapore is the best place to make this happen because of its small size and reliable power grid.

We also plan to work closely with utility companies to develop smart grid applications. The EV charging business is an interesting development for utilities because it is able to perform entirely different roles. It can be an electrical load, an energy storage buffer or a power quality stabiliser at different times of the day. Aligned with Singapore's plan to build a smart city, these technologies will enable people to use energy more intelligently and efficiently. ■