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ACCOMMODATING ELECTRIC CARS

Electric cars are here, but what do you do about the owner who needs to plug in from home to power up? Where do they plug in? *Inside Strata* went looking for answers with Wattblock's Brent Clark and found out the joys of the Tesla with StrataMax's Daniel Borin.

While we're all trying to find ways to reduce energy consumption and the cost of our electricity bills, it must seem odd that we would talk about a way that increases our electricity consumption.

Electricity doesn't have to be expensive and it can come from renewable sources as Tesla CEO Elon Musk has recently said. The real issue in a few year's time is going to be the cost of petrol.

If you think anything over a $1.50 a litre is expensive, it could go higher. We don't know when that will be because OPEC (the Organization if the Petroleum Exporting Countries) won't tell the world when peak oil (that's when we can expect the oil to run out) might be. So being prepared can only be a good thing, and that means potentially switching to electrical vehicles (EVs).

Where to begin?

Luckily we have people like Brent Clark with his company Wattblock around to do the hard yards with research that will help point strata schemes and strata managers in the right direction in catering to the needs of electrical vehicle owners.

Earlier this year, with assistance from the City of Sydney, which provided an environmental innovation grant, Wattblock surveyed and studied 80 schemes in the Sydney Local Government Area (LGA) talking to 750 individual apartment owners about charging EVs within their schemes.

"It was originally meant to have been a survey of 20 buildings, but it went viral, which in the end is great because it gives us much better insights and data," Brent said.

"One of the most interesting statistics is that 78 per cent of the apartment owners who participated, said they were in favour of having charging facilities within their strata schemes as long as user pays by-laws are in place."

Wattblock's research has found that within the next 10 years, EVs are expected to reach 25 per cent of new vehicle sales or an additional 250,000 vehicles on Australian roads each year.

"With more people moving into apartments, many of these EV owners will live in strata. Charging an EV at home is convenient, but for many apartment residents, this is a challenge due to the concern about the overloading of common area power supply, how to pay for the use of electricity and expensive installation costs," Brent notes.

Convincing strata schemes

With so many people indicating that they would drive an EV, something needs to be done to help them when it comes to recharging. While they can plug EVs into a standard power socket, this could result in owners using common property power, which is certainly not ideal. The installation of recharging stations could be a better solution, depending on the property.

According to Wattblock, there are a number of benefits to driving EVs including costs savings, environmental benefits (with the potential to cut greenhouse gas emissions depending on the source of the electricity), and the use of latest technology in the cars.

The real challenges are to convince strata schemes that having charging stations is a good idea once some of the issues can be overcome. These are not large issues and can be easily addressed with the co-operation of the strata committee.

"At the moment there are charging speeds issues. EV charge stations can be installed at 40 amps, but plugging in more than a few vehicles on this fast charging might limit electricity usage elsewhere, such as the elevator," Brent explains.

"Many charging stations can be installed at a slower speed of 16 amps which is perfectly acceptable, taking about three hours to recharge an average day's driving. This may be ok at night, if there are only a few vehicles needing the station.

"It may also be a challenge to retrofit older buildings as they have old electrical meters and in some case more than two EVs will overload the system. We have seen that happen already. The old meters can also be a fire hazard."

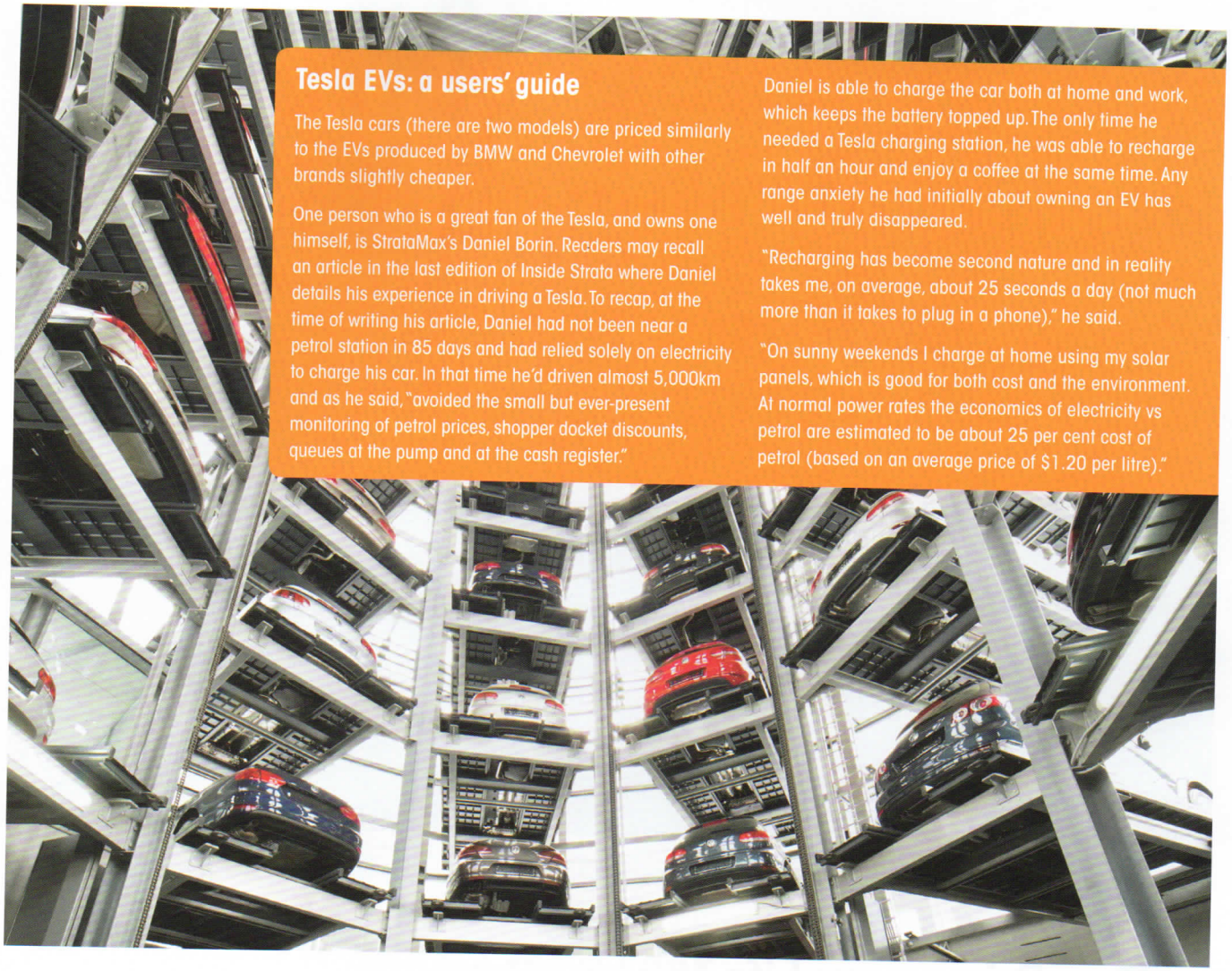
For a lot of strata schemes talk of retrofitting can be an instant turn off rather than the turn on it should be.

Brent says that there are simple solutions if the recharge station, or even a common property power point, is to be shared, which include a simple new by-law. By changing the nature of the parking spot or some common property, strata schemes could charge EV owners an annual levy to recharge in the allocated space, limited to four hours of consecutive charging at a time. This would pay for the electricity and/or pay for the cost of installation of a charging point as well as any electrical upgrade costs.

"One thing we did note out of the survey was while owners were supportive of others within their building using the recharge station, this did not extend to use by the public with only two per cent of respondents favouring this option."

Show us examples here

Wattblock has been working with one particular high-end building in the Sydney CBD, to work out what its needs are and how they can be addressed. Charging stations in the city are



Tesla EVs: a users' guide

The Tesla cars (there are two models) are priced similarly to the EVs produced by BMW and Chevrolet with other brands slightly cheaper.

One person who is a great fan of the Tesla, and owns one himself, is StrataMax's Daniel Borin. Readers may recall an article in the last edition of Inside Strata where Daniel details his experience in driving a Tesla. To recap, at the time of writing his article, Daniel had not been near a petrol station in 85 days and had relied solely on electricity to charge his car. In that time he'd driven almost 5,000km and as he said, "avoided the small but ever-present monitoring of petrol prices, shopper docket discounts, queues at the pump and at the cash register."

Daniel is able to charge the car both at home and work, which keeps the battery topped up. The only time he needed a Tesla charging station, he was able to recharge in half an hour and enjoy a coffee at the same time. Any range anxiety he had initially about owning an EV has well and truly disappeared.

"Recharging has become second nature and in reality takes me, on average, about 25 seconds a day (not much more than it takes to plug in a phone)," he said.

"On sunny weekends I charge at home using my solar panels, which is good for both cost and the environment. At normal power rates the economics of electricity vs petrol are estimated to be about 25 per cent cost of petrol (based on an average price of $1.20 per litre)."

few and far between and two publicly available solar-powered chargepoints provided by the City of Sydney are in private car parks, attracting parking fees.

In this case, adding chargepoints to the building will be convenient for residents but costs will include installing new distribution boards through a five-level basement car park.

To pay for these works, Wattblock identified a number of initiatives that will reduce energy consumption, including switching over lighting to LED lights, saving an incredible $330,000 each year. These savings will more than pay for recharging stations.

Another saving, not just for this building comes from the reduction in carbon monoxide emissions.

"The more Electric Vehicles that are in a basement car park, the less carbon monoxide emissions will be emitted. Over time as the number of EVs increases, this will reduce the carbon monoxide levels in the basement car park. If your strata scheme has carbon monoxide extraction fans triggered by carbon monoxide sensors, this will reduce the operating costs of the carbon monoxide extraction fan," Brent notes.

Examples overseas

The Lumina building in San Francisco is a great example of how adding recharging stations can attract new owners.

"During construction, the developer decided to install 25 EV stations for resident use within the garage. In just four months and at 25 per cent occupancy, 13 EV owners had moved in and were leveraging charge stations.

"Interestingly with intelligent charging stations installed, the building was not capped at 25 chargers like it would with traditional charging stations. Over 125 charge stations can be installed in the garage scaling to serve the growing needs of San Francisco residents without any additional electrical capacity.

"Taking that a step further, the intelligent stations can learn a car's driving pattern and share out charging, which optimises the entire system for the building in which it's installed."

While adopting new technologies can be challenging in the beginning, the long-term effects stemming from EVs are positive and easy on the wallet.

Words by Jennifer Ross