Sizing up the tiny Smart

Clever idea for an eco-smart car

NUS engineering students Javier Kwok and Ong Shiyi are building a car, though it’s not one that you’ll find in showrooms just yet.

Instead, the National University of Singapore engineering students are working on an Eco-Car to contest this year’s Shell Eco-Marathon, the competition for Green prototypes built by students.

In that respect, the Smart Fortwo Electric Drive might be considered a distant cousin of the car the pair are working on together with other NUS engineering students, and so we brought them face-to-face to see if the students would find Smart engineering a source of inspiration.

The Smart’s name might be lengthy, but the car itself is tiny, measuring just 2.5 metres from nose-to-tail (about half the length of an executive saloon) in order to take up as little road space as possible.

Like all Smart cars, it seats two people and has a small boot, but the unusual thing about this particular example is that it runs on electricity, meaning it has no tailpipe spewing combustion gases. Most of us are guilty of far fouler emissions, especially after a spicy meal.

Its 30-kilowatt motors lets it zip up to 100km/h, and its lithium-ion batteries are good for 135km. Charging it takes eight hours, although a faster charging mode can see it topped up to 80 percent capacity in three and a half hours.

Electric cars are “definitely” the future of urban driving, said Ong. Technology that would allow faster recharging is needed before that becomes a reality, she says, but she describes the Smart as “small yet functional”.

The 26-year-old is designing the carbon fibre bodywork of the NUS Eco-Car, and gives the thumbs-up to its “clean, sleek” looks.

Finer details caught her eye, too. “The roof of the car has a unique texture instead of the usual smooth surface. I believe this can reduce the aerodynamic drag of the car, adding to its eco-friendliness,” she said. “The brakes of the car are hydraulic-powered unlike others rigged to a potentiometer, providing better feedback and feel, just like with a normal car”.

Her teammate Kwok, who is designing the hydrogen fuel-cell powertrain of the NUS Eco-Car, found the Smart remarkably refined during a brief drive.

“Even though the steering feel and controls could be a little lighter, it does its primary job pretty well to ferry two adults effortlessly in an urban environment,” said the 24-year-old. “In fact, even when faced with steep hill climbs, the car still managed to overcome the slopes without any problems.”

Kwok describes the Smart’s range as “sufficient” given Singapore’s size, but said he would try to increase it to 160km, and add a bigger boot to boost the car’s usefulness.

Given their enthusiasm for the electric Smart, it’s a shame that they are unable to buy one. While the car is sold publicly in Europe, 20 units have been imported as part of the National Electric Vehicle Test-Bed scheme, but can’t be purchased privately.

Just as well, then, they are building their own electric car. JULIAN LOW