

BRUNEI STUDENT TEAMS COMPETE WITH OVER 100 STUDENT TEAMS AT SHELL ECO-MARATHON ASIA 2016

Shell Eco-marathon was held for the third and final time from March 3 – 6 in Luneta Park, Manila. It was the seventh instalment since its debut in Asia in 2010. The competition challenges student teams from around the world to design, build and test ultra energy-efficient vehicles which means one that can travel the furthest with the least fuel. Brunei, with the support from the Brunei Shell Joint Venture (BSJV) Companies, has been active in sending student teams to the competition since 2011.

Universiti Teknologi Brunei (UTB) UTB One-U made their first debut in the competition bringing in their battery electric vehicle 'Pahlawan II'. Universiti Brunei Darussalam (UBD) GenNext Pejuang returned with a new look for the vehicle after achieving a placing in the top 3 last year with their hydrogen fuel cell vehicle 'Nakhoda'.

Upon arriving at the venue, students had to register and attend safety briefing talks that covered what are the do and don'ts during the entire competition. Once at the paddocks, the teams had to unpack their cargo which contained their vehicles and tools. Teams had to work immediately to get their vehicles ready for technical and safety inspection as teams who have successfully passed inspection are then able to make attempts on the track.

This year, the technical inspections proved to be the main challenge for both teams as the students had to work hard to be able to make it out to the track. The technical inspections included vehicle weight, driver weigh in, car dimensions, design check amongst others. The brake system inspection proved to be the main obstacle for both teams with both teams having had to go back into their respective paddock to make adjustments after adjustments to pass the gruelling brake test. Team UTB One-U had to fix their brake system with a new brake layout despite passing 9 out of 10 inspections including minor tweaks had to be made to their seat belt. Team UBD GenNext Pejuang went through similar issues as well where they had to make minor adjustments to their seat belt and fix their rear braking system. It did not end there for team UBD GenNext Pejuang as they had to go through several attempts to pass the stringent hydrogen fuel cell system inspection. The team had to readjust its hydrogen sensor's sensitivity and rewire its capacitor to ensure easy access to read Nakhoda's voltage before finally receiving their anticipated stickers.

Third day into the competition, both teams were proud to receive their technical and safety inspection stickers. However, more challenges were faced by UTB One-U during their run when Pahlawan II's burst, costing them two hours having to wait and get new tyres. Despite being faced with obstacles after obstacles, Mechanical students Ahmad Amthali stated, "We are honoured to be able to represent UTB and Brunei in such a prestigious event. We will do our very best for UTB and Brunei."

Although faced with unforeseen challenges, the students continue to show enthusiasm and determination by endlessly making adjustments to their vehicles. Even after passing

the technical inspection, teams still had to undergo a final technical and safety inspection at the pit each and every time before entering the track and going out for their runs.

Pahlawan II driver, Lester Ong Kai Xiang was unable to finish 10 laps within 29 minutes as the vehicle did not produce enough speed. After a few runs around the track, they realised that the motor had blown. They had only 30 minutes to return and attempt another run before the category closes. They tried resourcing from teams from other countries, however only one had the same specification and they were about to make their runs too. Team UTB One-U managed one attempt on the track for the Prototype Battery-electric category. Despite not being able to make a valid run, as first timers, the team was proud to have managed to come so far and finally realise their participation in the competition. They are motivated and encouraged to come back stronger next year. They hoped that with the experience they gained, they were able to generate interest and inspire fellow students to participate in future competitions.

As for team UBD GenNext Pejuang, they did not manage to get a valid run from the 2 attempts they made on the track. The disappointment was felt amongst the whole team as they have worked on the car for such a long time and they felt that they have let down the people supporting them in Brunei. However, team manager Mohd Khaiful Zhafri bin Haji Mohd Noor also pointed out, "But with this kind of motivation itself, it will drive the team to become a greater contender in the next SEM. The valuable experience that we have learned from the past 7 days will be remembered in order to improve, be better prepared and not to repeat the mistakes that we've encountered in this year's SEM. I am happy with the team's team spirit as they show no sign of giving up until the very end, the teamwork quality and fluidity as every problem we encountered we have sorted it out together. I am also happy that the team is committed and shared the same passion throughout the entire project and this event"

The experience and knowledge the teams gained throughout their journey was also valuable despite not achieving a placing in the competition. They were able to share ideas and broaden their network with other student teams from the region. Their journey was not limited to just the 7 days of their stay for the competition but in fact a year to put everything together in place. Presence of the BSJV volunteers from Brunei also helped to boost their spirits up, motivating the teams to work hard throughout the event.

The Shell Eco-Marathon Asia project showcase as a project that emphasise on innovation and supports youth development. The competition challenges student teams from around the world to design, build and test ultra energy-efficient vehicles which means one that can travel the furthest with the least fuel. It has given the students a platform to explore and experiment with technology and fuels to develop creative and innovative mobility solutions. In their Shell Eco-Marathon Asia journey, students have had to exercise their leadership and teamwork; and apply their technical, problem solving, communications and self-reliance skills. It has also encouraged the students to plan and execute their projects efficiently in terms of time and cost; and innovatively. This is in line with Brunei's Wawasan 2035 to build highly skilled and educated individuals.