

ENERGY BREAKTHROUGH

The RACV Energy Breakthrough is a joint initiative of the Country Education Project (CEP), Central Goldfields Shire Council (CGSC) and the Royal Automobile Club of Victoria (RACV).

The RACV Energy Breakthrough provides opportunities for students, teachers, parents and local industry to work together to design and construct a vehicle, a machine or innovation in technology that will represent an 'energy breakthrough'.

The program encourages participants to examine and use the latest technology while considering its impact on the environment and the way people live locally and globally.

The RACV Energy Breakthrough isn't just a once-a-year event. School groups work throughout the year to design, build and test vehicles or machines within detailed specifications. It requires a team effort and an across-the-curriculum approach. These groups then bring their vehicles and machines to Maryborough in the Central Goldfields Shire, Victoria for a huge celebration in which they can demonstrate and trial them in action. (<https://www.racveb.com>)

Two of the Diocese's schools tell their story about participating in the RACV Energy Breakthrough:

Energy Breakthrough and St Patrick's PS, Ballarat



This year, thirty students from St Patrick's Primary School, Ballarat travelled to Maryborough to compete in the annual RACV Energy Breakthrough Competition. The competition has grown steadily over the past twenty-seven years and includes Primary and Secondary competitions, all with environmental and/or design and technological aspects. It is an amazing time for students, camping in tents for the event with lots of terrific parental involvement.

Over the past four years, St Patrick's Primary School has entered a Human Powered Vehicle Team, consisting of ten grade 6 students and a ten-person Pushcart Team involving grade 4 and 5 students. Students train during lunchtimes with HPV training taking place on weekends, over three terms. Aside from riding, students have to learn about aerodynamics and the design and construction of their vehicle.

The pushcart team have to work together to take apart and reassemble the pushcart as well as knowing the names of the tools involved. They take part in an obstacle course, endurance race and a sprint.

HPV riders take part in a fourteen-hour endurance race and also need to know road rules, be able to change tyres, fix punctures and assist with general tricycle maintenance.



Each team presents an oral presentation before a panel of judges, explaining their preparation and sharing their knowledge about climate change, how to care for the environment and all other aspects of the competition.

This year's final results - our pushcart team came an overall 21st out of 38 and our HPV team came 43rd out of 73.

These numbers don't tell the real story though. Our students and photographs do a much better job!

I loved the teamwork and the thrill of pushing and steering the pushcart. It was fun watching others participate when we were not racing. I loved presenting our presentation. (Lizzy)



I had a great time, not just riding but also doing our presentation. We had to tell the judges about our safety features (because those were really important). Riding the trike was amazing. We got to lift the trike up over our heads and carry it back to the pit stop at the end of the race. The whole experience was just absolutely incredible! (Joe)

Energy Breakthrough was an amazing experience. The thrill of just watching others race and racing myself was incredible. The end of the HPV race was extraordinary. It was a challenge to ride for 30 mins in scorching hot conditions. I actually thought it was really exciting. (Holly)

We had lots of exciting moments, like the pushcart kids coming second in sprints and third in long distance.

We had lots of fun racing in the competition and it is an amazing experience that we will never forget. I hope to be there again next year. (Lily)

Thea Hubble

Damascus College Ballarat Energy Breakthrough Team

This year at Energy Breakthrough, it's been huge! We attended three races starting in March where we raced our two HPVs (Human Powered Vehicles) 'Rolling Thunder' (B2 Team) and 'Get Outta My Swamp' (Girls Only). Within the early hours of the 24 hour Wonthaggi race, 'Rolling Thunder' had serious issues and was in last position at the three hour mark, however our strong riding order brought us up to 36th position overall out of 103 other competitors by the end of the event, while our girls team kept 4th position in their category. We also had one of our riders – Ryan Jans, get the fastest lap in category.



In late August we attended our second race which was the Bendigo Grand Prix, a nine hour event. We attended with our two HPVs – 'Slipstream' and 'Shrek' which were both in the intermediate category, with 'Slipstream' finishing in 26th position overall.

This year we also ran our first ever training camp, with the purpose for our riders and techies to gain as much experience and training in our race trikes over the course of the 2 ½ days. We spent the 2 ½ days in Halls Gap where we rode over 1000km between our three trikes. It was a huge success and the whole team benefited greatly from the friendships and experiences gained throughout the camp. We can't wait to run another training camp next year.

We attended the major event, the RACV Energy Breakthrough in Maryborough recently. We entered three trikes, our EEV, Hybrid and HPV. An amazing achievement, with second overall in the electric battery powered vehicle class,

second overall in the hybrid battery and pedal powered class and although the Human Powered Vehicle team didn't quite manage a podium finish, the commitment and energy displayed by those students defied belief.



EEV – ‘Red Back’: Nic Foster, Ruby Hateley, James Steinman-Tully, Jonathan Western, Tom McGlinn, Anthony Young, Liam Claridge, Rhiannon Walker, Maddison Hollingworth, Callum Wellwood-Kane

Hybrid – ‘Killa Watt’: Ally Gunn, Bec McColl, Travis O’Brien, Ryan Penn, Sven Reukin, Clarie Roberts, Katie Walker, Patrick Western

HPV – ‘Slip Stream’: Harry Buck, Patrick O’Beirne, Sam Cassar, Hunter Ibbotson, Tom Prunty, Michael Walker, Bayley Foy, Ruby Haeusler, Ryan Jans, Brgid Lavery, Hannah Martin, Ben Rofe, Ben Rowse.

In the workshop this year, we spent countless hours learning new skills and applying our skills into the construction of our race trikes for the events. We have also applied our knowledge into putting together our new wind tunnel, and being part of the team to source and build the school’s new state of the art Rostock 3D printer. We are using The Rostock to print and test different parts for our trikes. We have also held two very successful fundraisers throughout the year, we ran a BBQ on election voting day at Damascus and we also ran our annual Cadbury chocolate fundraiser, together raising over \$6,700 for the team.

We would like to give a special thanks to all the parents and past collegians who have been part of the team this year, their assistance and knowledge have been a huge asset to the team and the students. We would also like to give a special shout out to Mark McLean, Laura Kimm (nee Goltz), Alan Strange, Peter Martin and Ryan Spiteri who have given up endless amount of their free time to allow us to have this fantastic opportunity.

Nicholas Foster and Jonathon Western

