# Students Put Energy Efficient Cars to the Test at Shell Eco-marathon Americas

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# Three Teams Advance to London for the Drivers' World Championship

SONOMA, April 7, 2019 - Make the Future Live California featuring Shell Eco-marathon Americas drew more than 1,000 students to Sonoma Raceway to compete for the title of most fuel-efficient vehicle.

Northern Illinois University of DeKalb, Illinois took home first place in the Internal Combustion Engine Prototype category with their gasoline-fueled vehicle achieving 1,524 miles per gallon. This was the college's first time winning the Shell Eco-marathon Americas Mileage Challenge competition.

"This award means everything to our team," said Josh Helsper, team leader of Northern Illinois University. "It validates all the engineering we've learned and the work we've done."

Mater Dei High School broke the United States UrbanConcept record in the Battery Electric category with a 68.2 miles per kilowatt-hour run. The high school has participated in every Mileage Challenge since the inaugural Americas competition in 2007.

This year, a total of 88 high school and college teams from across the Americas including Argentina, Brazil, Canada, Colombia, Ecuador, Guatemala, Mexico and the United States, participated in the competition, in two vehicle classes: Prototype and UrbanConcept. The Prototype class is focused on ultra-efficient, lightweight designs, typically with 3 wheels. The UrbanConcept class focused on more "roadworthy" vehicles aimed at meeting some of the real-life needs of drivers. Entries were divided into three energy categories: Internal Combustion Engine (gasoline, diesel and ethanol), Hydrogen Fuel Cell and Battery Electric.

"These students have dedicated countless hours to developing solutions that support a cleaner, lower-carbon energy future," said Shanna Simmons, Global Technical Director Shell Eco-marathon. "The mileage challenge is a platform for students to test their theories on energy efficiency and receive hands-on experience before entering the workforce."

The Shell Eco-marathon Americas 2019 Winning Teams

Student teams worked intensively from Wednesday to Saturday to pass detailed technical and safety inspections before heading to the iconic Sonoma Raceway track for the Mileage Challenge. Each team's vehicle was required to make eight laps for a total distance of 6.12 miles within 24 minutes. The winners in each class follow, based on vehicle class and energy category:

- Prototype Internal Combustion Engine: "NIU Supermileage," Northern Illinois University, 1524.9 mpg
- Prototype Battery Electric: "Eco Illini Supermileage," University of Illinois at Urbana-Champaign, 152.0 m/kWh
- Prototype Hydrogen Fuel Cell sponsored by Linde: "Ualberta EcoCar Prototype Team," University of Alberta, 159.8 m/m3
- UrbanConcept Internal Combustion Engine: "Wawasee Gold," Wawasee High School, 680.7 mpg
- UrbanConcept Battery Electric: "Mater Dei Supermileage 2," Mater Dei High School, 68.2 m/kWh

Student teams also won awards for their work off the track, in the following categories:

• Technical Innovation Award sponsored by Southwest Research Institute: BYU SMV, Brigham Young University implemented a system to quickly optimize the air-fuel ratio over a short engine burn time. The optimization is meant to achieve better fuel economy and reduce harmful emissions.

- Most Innovative H2 Award sponsored by Linde: Ualberta EcoCar Prototype Team, University of Alberta was awarded this off-track award for the customized controller built for their hydrogen fuel cell powered vehicle.
- Communications Award: LA Tech EcoCar, Louisiana Tech University submitted an integrated communication plan with clear objectives, audience and content strategy, multi-channel tactics and measurable analytics.
- Vehicle Design Award for Prototype: Pato a Jato, Universidade Tecnológica Federal do Paraná used an eco-friendly plant-based resin and biodegradable material made with a 3D printer. The car is painted yellow, which was chosen to reflect light better than dark colors, decreasing the internal temperature.
- Vehicle Design Award for UrbanConcept: LA Tech EcoCar, Louisiana Tech University pushed the envelope in design. They paid attention to detail including mounted LED lights inside the body of the car for a sleeker and more aerodynamic look.
- Safety Award: Texas A&M University had a high-quality submission and went into great detail on their processes to ensure their car and driver were safe. Ultimately, they chose driver safety over and above track performance and chose not to take an additional risk to complete a last attempt.
- Perseverance and Spirit of the Event Award: EEV at Sac State, California State University, Sacramento. This team was organized, funded and managed entirely by students with minimal support from the school. The team included students from diverse engineering disciplines with a clear delineation of roles, while still working collaboratively.
- Southwest Research Institute Scholarship Winners: \$1,000 scholarships were awarded to three students from University of California, Berkeley; Rice University; and San Antonio College.
- Travel Safety Stipend: The LSU Capstone Team from Louisiana State University provided a very detailed journey management plan, which took into account rest times, driver changes and proper sleep times.

Drivers' World Championship Qualifier

The winning schools have earned themselves a place in the Drivers' World Championship to be held at the Make the Future Live event in London, UK, from July 1-5, 2019. They will face-off against teams from Asia and Europe for the chance to be crowned world champions and earn a once-in-a-lifetime experience at the home of Scuderia Ferrari in Italy. This is a global competition to match the proven energy efficiency of their cars, with the speed, skill and strategy of the driver to see who can cross the finish line first without running out of their limited allocation of energy.

Within the Drivers' World Championship Terms and Conditions, only one team from any school can be awarded an opportunity to compete in the Shell Eco-marathon Drivers' World Championship. As such, the team who finished fourth in the race, Alden-Conger High School's Knights 3 team, will also join the following teams in London:

- First Place: Wawasee Gold, Wawasee High School
- Second Place: Mater Dei Supermileage 2, Mater Dei High School
- Third Place: Mater Dei Supermileage, Mater Dei High School

Shell's Make the Future Live Partners, many of whom actively used the event as a recruitment ground, included: Agility, Altair, Dassault Systèmes, HP, Linde, Sonoma Raceway, Southwest Research Institute and Toyota.

To learn more about Make the Future Live California, please visit the website.

About Make the Future Live

Make the Future Live is one of Shell's global platforms that offers conversation, collaboration and innovation around the world's energy challenges. With events hosted in countries around the globe, they aim to provide an opportunity for multiple stakeholders: including students, entrepreneurs, businesses, governments and the public, to experience, test and contribute bright energy ideas.

# About Shell Eco-marathon

Shell Eco-marathon is a global program built to offer students hands-on opportunities to develop ideas and

# technology, knowledge and skills, within an arena of competition.

Currently held in Asia, the Americas and Europe and made up of two key competitions: Mileage Challenge, and Drivers' World Championship, students from countries across their respective regions use innovative problem-solving skills to design and build their own cars. Looking at every aspect of design and technology, students then compete to prove that their bright ideas will produce the most energy-efficient vehicle when tested on the track.

The concept of Shell Eco-marathon began in 1939 at a Shell research laboratory in the United States as a friendly wager between scientists to see who could get the most miles per gallon from their vehicle. In 1985 in France, Shell Eco-marathon as we know it today was born. In April 2007, the Shell Eco-marathon Americas event was launched in the United States, and in 2010, the inaugural Shell Eco-marathon Asia was held in Malaysia, up until 2013. In 2019 Regional Shell Eco-marathon Mileage competitions will be held in Kuala Lumpur, California and London. London will also host the Drivers' World Championship, with qualifying events held in California and Kuala Lumpur.

# About Shell Oil Company

Shell Oil Company is an affiliate of the Royal Dutch Shell plc, a global group of energy and petrochemical companies with operations in more than 70 countries. In the U.S., Shell operates in 50 states and employs more than 20,000 people working to help tackle the challenges of the new energy future. Shell Oil Company is a leading oil and gas producer in the deepwater Gulf of Mexico, a recognized pioneer in oil and gas exploration and production technology and one of America's leading oil and natural gas producers, gasoline and natural gas marketers and petrochemical manufacturers.

# About Sonoma Raceway

Sonoma Raceway, located in the Sonoma Valley, is Northern California's premier motor-sports destination, featuring a world-class road course, drag strip and karting center. Its annual race schedule is headlined by the Monster Energy NASCAR Cup Series, NHRA Mello Yello Drag Racing Series and Verizon IndyCar® Series. In addition, Sonoma Raceway boasts a motor-sports industrial park, which serves as home to more than 70 businesses, including the Simraceway Performance Driving Center. Sonoma Raceway is a wholly-owned subsidiary of Speedway Motorsports, Inc., a leading marketer and promoter of motor-sports entertainment in the United States.

# **Cautionary Note**

The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate legal entities. In this press release "Shell", "Shell group" and "Royal Dutch Shell" are sometimes used for convenience where references are made to Royal Dutch Shell plc and its subsidiaries in general. Likewise, the words "we", "us" and "our" are also used to refer to Royal Dutch Shell plc and subsidiaries in general or to those who work for them. These terms are also used where no useful purpose is served by identifying the particular entity or entities. "Subsidiaries", "Shell subsidiaries" and "Shell companies" as used in this press release refer to entities over which Royal Dutch Shell plc either directly or indirectly has control. Entities and unincorporated arrangements over which Shell has joint control are generally referred to as "joint ventures" and "joint operations", respectively. Entities over which Shell has significant influence but neither control nor joint control are referred to as "associates". The term "Shell interest" is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in an entity or unincorporated joint arrangement, after exclusion of all third-party interest.

This press release contains forward-looking statements (within the meaning of the U.S. Private Securities Litigation Reform Act of 1995) concerning the financial condition, results of operations and businesses of Royal Dutch Shell. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Royal Dutch Shell to market risks and statements expressing management's expectations, beliefs, estimates, forecasts, projections and assumptions. These

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