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### **AD ASTRA ROCKET COMPANY COMPLETES KEY PROJECT MILESTONES ON COSTA RICA'S FIRST HYDROGEN-ELECTRIC TRANSPORT ECOSYSTEM**

[Liberia, Guanacaste – for immediate release]  
– Ad Astra Rocket Company has achieved the last two major milestones towards the completion of Costa Rica's first hydrogen-based electric transportation ecosystem. These include the integration of all hydrogen production, storage and dispensing subsystems at Ad Astra's Liberia facility and the final coordinating steps in the procurement, transport and operation of the hydrogen fuel-cell electric passenger bus. The bus will begin operations in June of 2017 on demonstrative routes in and around the City of Liberia, Guanacaste.

Manufactured by Belgium's Van Hool for US Hybrid Corporation who integrates the fuel-cell electric power train, the bus has a seated capacity for 35 passengers and an approximate range of 338 km on 38 kg of compressed hydrogen.

The Hydrogen Ecosystem Project is a public-private partnership (PPP) between Costa Rica's Sistema de Banca para el Desarrollo (SBD), a public financial institution, promoting Costa Rica's technological development and four other partners under the leadership of Ad Astra, including, Air Liquide, a world leader in gases, technologies, and services for industry and health; US Hybrid Corporation, specializing in hydrogen fuel-cell electric vehicles, Cummins Inc. a US global power leader in diesel and alternative fuel engines, and Relaxury S.A., a subsidiary of Costa Rica's Purdy Motor S.A, who will operate the bus initially for the partnership as a not-for-profit demonstration for the Costa Rican people. All team members have contributed their own resources to the project.

The partnership combines key logistics, expertise and technology to launch the bus as part of a carbon-free sustainable ecosystem and seeks operational experience with clean,

domestically produced hydrogen as a viable transportation fuel for Costa Rica and other economies looking to achieve a carbon-free energy infrastructure. Fuel-cell electric vehicles could promote the profitable growth of a clean transportation alternative in regional markets.

"We are excited to tackle our generation's biggest challenge: freeing ourselves from our dependence on fossil fuel and focus on sustainable solutions." said Dr. Jose Castro Nieto, Ad Astra, Costa Rica's Chief Scientist. "We credit this achievement to the efforts and professionalism of the partnership's team," said Mr. Allan Rivera Alfaro, Chief Ad Astra Integrator and Project Manager.

#### **ABOUT THE TECHNOLOGY**

Hydrogen is produced from renewable electricity through water electrolysis and stored for later use. When used in transportation, hydrogen, stored on-board the vehicle, combines with oxygen from the air to produce electricity, which feeds an electric motor and produces movement. The only byproduct is clean water vapor. Hydrogen-based technologies enable the use of renewable energies for transportation while maintaining the range and fueling-speed convenience of traditional fossil-fuel vehicles.

#### **ABOUT AD ASTRA**

A US Delaware corporation established in 2005, Ad Astra Rocket Company is the developer of the VASIMR® engine, an advanced plasma space propulsion system aimed at the emerging in-space transportation market. Ad Astra also owns and operates supporting research and development subsidiaries in the US and Costa Rica. Through its subsidiaries, the company also develops earthbound high technology applications in renewable energy, advanced manufacturing and applied physics. Ad Astra has its main laboratory and corporate headquarters at 141 W. Bay Area Blvd in Webster, Texas, USA, about two miles from the NASA Johnson Space Center.