

COMMERCE

Jaguar Land Rover offsets carbon footprint with energy efficient research

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Land Rover Discovery XXV Special Edition

By STAFF REPORTS

British automaker Jaguar Land Rover is looking to create an energy efficient heating and ventilation solutions for its vehicles to offset the environmental impact of driving.

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Presenting at the CENEX Low Carbon Vehicle event, the automaker also spotlighted some of its zero or low emission solutions, including its battery electric vehicle, plug-in hybrid and mild hybrid technologies. Taking a proactive approach to reducing its environmental impact may win Land Rover fans within the ecologically-minded community.

Energy exploration

Heating, ventilation and air conditioning units currently consume a large amount of fuel, or electric energy stored in a battery in a hybrid car.

Rather than heating or cooling a continuous stream of air that enters the car, one alternative being investigated is heating or cooling an “Air Bubble” to a set temperature once, and then using energy to retain the same temperature within the vehicle. This temperature control would be managed with new HVAC technologies, such as infra-red reflective glass that would reflect the sun’s rays, keeping the car cooler.

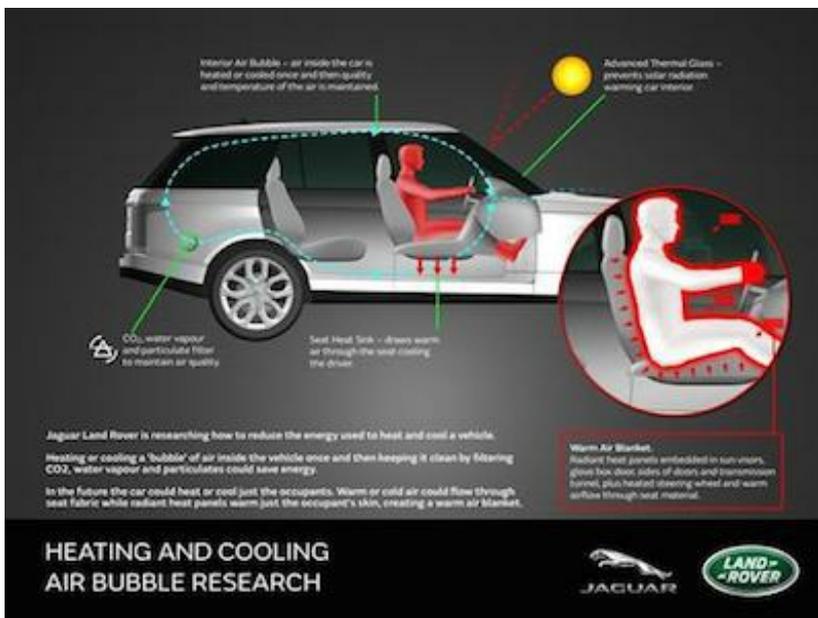


Diagram of Jaguar Land Rover Air Bubble

To manage carbon dioxide levels, air would pass through a filter in the trunk that would also take out moisture and particulates.

“Warm Air Blanket” research investigates the use of porous openings in the seats to deliver hot or cold air to passengers. Infra-red panels within the cabin would envelop those riding in their own “micro-climate,” heating only them instead of the entire interior space. Tests show this could reduce energy use by half.

Also looking to save energy, Jaguar Land Rover is investigating weight-saving innovations, such as replacing circuitry with thin printed wires and swapping out steel seat structure for ones made of polymer, making them 30 percent lighter.

“Weight saving is crucial to improve fuel consumption and emissions,” said Dr. Wolfgang Epple, director of research and technology at Jaguar Land Rover, in a statement. “Jaguar Land Rover’s engineers lead the world in the development of lightweight vehicle bodies to reduce weight to improve handling, fuel efficiency and emissions.

“Our researchers are moving beyond lightweight body structures and are looking at every component in the car, from how to replace traditional wiring looms with printed electronics, to developing prototype seats much lighter than they are today,” he said. “We are also investigating how we could make use of carbon fibre in future vehicles by mixing carbon fibre with innovative new materials like flax, as well as new techniques for manufacturing carbon fibre components in higher volumes than is feasible today.”

The auto industry is focusing more on sustainability, responding to growing consumer demand for environmentally friendly vehicles.

Many luxury automakers have turned their attention to electric vehicles as the technology has become more accessible in recent years, according to a report by Frost & Sullivan.

Consumers looking to limit the use of fossil fuels and promote environmental sustainability have flocked to purchase luxury vehicles from the U.S. electronic automaker

Tesla Motors, and other brands are now eager to follow suit. “The Future of the Luxury Electric Vehicle Market” suggests that electric vehicles will see a surge in popularity as more automakers are able to embrace the trend and create their own electric cars ([see story](#)).

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