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Development of Hyundai's Tucson Fuel Cell Electric Vehicle

현대 투산 연료전지차 개발

김세훈 · 김영범 · 정유석 · 정낙승 · 임태원
현대자동차

Hyundai Motor Company developed its second-generation fuel cell hybrid electric vehicle (FCEV) based on its small Tucson SUV. Compared to Hyundai's first generation fuel cell vehicle, the Santa Fe FCEV, the Tucson FCEV has an extended driving range plus cold weather starting capability. It incorporates numerous technical advances including a fuel cell that operates at sub-zero temperatures and a new high voltage lithium ion polymer battery.

Using both a fuel cell and a high voltage battery as sources for driving energy, the Tucson hybrid system provides optimum driving conditions, which ensures high tank to wheel efficiency. The Tucson FCEV's power plant has been located in the front under the front hood unlike its predecessor Santa Fe FCEV, which featured an under-floor installation. More importantly, Tucson FCEV's driving range has been extended to 300km thanks to its 152-liter hydrogen storage tanks. Marginally lighter than its predecessor, the Tucson FCEV also gets five more kW of fuel cell power for a peak output of 80kW. Its maximum speed is rated at 150km/h compared to the Santa Fe's 124km/h. Built with lightweight, performance-boosting aluminum body components the Tucson FCEV has a power-to-weight ratio similar to that of a conventional SUV. It also features low noise levels plus a roomy cabin that offers the same level of comfort and convenience as its gasoline-powered sibling.

Hyundai's Tucson FCEV is in operation for the DOE's controlled hydrogen fleet and infrastructure demonstration and validation projec