

# Green Car Congress

Energy, technologies, issues and policies for sustainable mobility

15 June 2016 [Home](#) [Topics](#) [Archives](#) [About](#) [Contact](#) [RSS](#) [Twitter](#) [Headlines](#)

Search GCC

[« Honda launching new Fit and Fit Hybrid in Japan](#) | [Main](#) | [Airbus and China to collaborate on modernizing the country's air traffic management system; environmental benefits](#) »

 [Print this post](#)

## GKN Driveline on-demand all-wheel drive system contributes to improved fuel consumption in 2014 Range Rover Evoque

5 September 2013

In August, Land Rover [introduced](#) the 2014 Range Rover Evoque, equipped with several new technologies which, combined, can lower fuel consumption by up to 11.4% and reduce CO<sub>2</sub> emissions by up to 9.5%. In addition to the new 9-speed transmission ([earlier post](#)), the new Evoque offers as an option an Active Driveline—an on-demand four-wheel drive system which operates in front-wheel drive only during steady-state driving at speeds above 22 mph (35 km/h).



2014 Range Rover Evoque. [Click to enlarge.](#)

A GKN Driveline all-wheel drive system is [basis](#) for the the Active Driveline disconnect all-wheel drive system.

The GKN all-wheel drive system reacts to the driving environment and driver intention by automatically disconnecting the major rotating driveline components to reduce losses. Traction and driving stability are optimized by the active torque biasing feature offering advanced control on the distribution of the torque between the front and rear wheels.

GKN suggests that the Active Driveline system demonstrates the benefits of partnering with GKN Driveline on whole driveline supply and integration. (GKN is also one of the Evoque-e consortium members developing modular technologies for HEV, PHEV and BEV applications. [Earlier post.](#))

The co-development of the Active Driveline has achieved a significant reduction in driveline spin loss, which in turn contributes to the 2014 Range Rover Evoque's overall fuel consumption reduction.

The GKN All-Wheel Drive System includes a GKN power transfer unit (PTU), linked to the transmission's final drive differential, containing a synchronizer and brake to disconnect the all-wheel drive system upstream of the PTU hypoid gears.

At the rear of the system, the GKN Twinstar rear drive module (RDM) drives each rear wheel via an independent wet multi-plate clutch. These clutches can disconnect the all-wheel drive system downstream of the RDM hypoid gears.



(Left) Power Transfer Unit. (Right) Twinstar RDM. [Click to enlarge.](#)

The GKN PTU synchroniser and GKN Twinstar are controlled by a dedicated driveline control unit designed to constantly monitor vehicle dynamics, disconnecting during steady-state driving speeds above 22 mph (35 km/h) and automatically reconnecting (within 300 milliseconds) when required.

In addition to the disconnect function the GKN Twinstar also acts as an electronic differential combining drive vectoring and limited slip differential technology for active torque biasing.

**GKN 2031**

In addition to the innovative Active Driveline, GKN Driveline also supplies the all-wheel drive system for the 2014 Range Rover Evoque Standard Driveline. Power transfer units and Rear Drive Modules for both variants are produced in GKN Driveline Köping in Sweden with front sideshafts and propshafts supplied out of GKN Driveline Birmingham, UK.

The 2014 Evoque continues to be powered by Land Rover's range of lightweight four-cylinder engines with a choice of either the 2.2 diesel 150PS engine, 2.2 diesel 190PS engine or 2.0 gasoline 240PS engine (depending on market). Combined fuel consumption for the 2014 range is up to 48 mpg US (4.9 l/100 km), with CO<sub>2</sub> emissions starting from as low as 129 g/km.

September 5, 2013 in [Fuel Efficiency](#), [Vehicle Systems](#) | [Permalink](#) | [Comments \(1\)](#) | [TrackBack \(0\)](#)

## TrackBack

TrackBack URL for this entry:

<http://www.typepad.com/services/trackback/6a00d8341c4fbe53ef019aff3303c2970c>

Listed below are links to weblogs that reference [GKN Driveline on-demand all-wheel drive system contributes to improved fuel consumption in 2014 Range Rover Evoque](#) :

## Comments



Lanr rover i adopting a sialr setup to the recntly released Jeep Cherokee sytem.

Off road True Believers object to the complexity and electronics but they would also bray at "modern" electronics like starter motors, automatic transmissions, electric lights, and new fangled hydraulic brakes.

You can hear them wail at night over the auto makers packing their new vehicles with electronics. "Bring back the hand crank for the motor" or "Where is my manual choke?" or "I want my hand throttle back." or "Who needs these new-fangled hydraulic brakes? I liked Henry's sure mechanical brake linkages".

Posted by: [D](#) | [September 05, 2013 at 02:06 PM](#)

*Post a comment*

This weblog only allows comments from registered users. To comment, please [Sign In](#).