

2010 TRUCK KING COMPARRISION CHEVY SILVERADO HYBRID

GM brought out its first generation hybrid pickup truck in 2004, and like the early Toyota Prius it sold in only small numbers. But, unlike the Prius it did not generate the same media coverage that ten years later has made the Prius hybrid the poster child of the retro-hippie set. Strange that. But, like Toyota GM is committed to hybrid propulsion and can see the need to keep building vehicles like this pickup – which in many ways is more important than a passenger car. Small cars abound, but trucks have to remain large – its their function – so what better vehicle to be built as a hybrid?

Equipped with a standard 6L Vortec V8 this truck also generates its own power by using gravity each time the truck slows – recharging the 300V batteries that will then feed the voltage back to the electric motors after the next stop. Of course there is a bit more to it then that, but the key idea is that this hybrid system re-captures energy that the truck produces anyway - energy that in other vehicles is wasted as the byproducts of combustion.

Called GM's Electrically Variable Transmission (EVT) it uses a 300V nickel-metal hydride Energy Storage System (ESS) that saves and gives back that power. This EVT is a unique setup of two 60 kW electric motors, three planetary gearsets and four traditional hydraulic wet clutches. This arrangement is continuously in variable operation offering the greatest efficiencies at any given moment under any specific load.

From a stand still the Silverado launches and drives up to 45 km-h (30 mph) on electricity alone, then the 6.0L gas engine takes over; but this V8 engine also has Active Fuel Management (AFM) and late intake valve closing (LIVC) technology which lets it operate in V4 mode once its reached highway speeds. To help it stay in V4 mode as long as possible the EVT also offers the equivalent of a 30 hp boost of electric power, when needed at high speeds. Again, its all about physics – minimize friction, use gravity to make electricity and maintain motion using the least amount of energy.

Earlier this year I drove this hybrid on a highway run to Ottawa (from Brampton, ON). It was clear but cold at around -12C/ 5 F and there were five of us in the truck and the bed was stuffed with my university bound sons belongings (including a brilliant red beanbag chair bungeed on top of the pile). I set the cruise at 120 km-h / 75 mph and did the trip of 503 km / 312 miles on 75 L / 16.5 gallons CND / 19.8 gallons US of regular fuel – or 14.9L per 100 km (18.9 mpg CND 15.8 mpg US). The return trip data was almost identical. Since then I've gotten some emails asking why I was speeding – I mention this only because I make it a habit to drive like the majority of population – in other words, real world speeds that net real world fuel consumption.

An issue with some other hybrids currently on the market is towing. Specifically they can't. Not so with the GM system. This tranny will handle up to 5,900 lb / 2,676 kg using the variable electric/gas operation and fixed-gear ratios in the transmission for heavier loads. Interestingly much of this technology and build experience was gained from GMs development of hybrid passenger bus drive-trains.

Earlier this year I set up a towing test with the identical hybrid system in an early build Chevy Tahoe. My choice of trailer (2008 Keystone Sprinter – length: 28'11" and weight: 2,866 kg / 6,318 lb) pushed the Tahoe to just past the limit set by GM.

I towed it with an equalizing hitch and found, in general, it didn't feel like it was a burden to any aspect of the powertrain. I also noted that from a standing start the electric motors alone moved the trailer easily and at higher speeds (sticking to the speed limits) the V4 would still stay engaged on level pavement at 80 km-h / 50 mph. I also ran the unit in cruise control and the truck maintained its speed all up and down through the hilly Oakridge's Moraine countryside popping in and out of V8 mode as dictated by the rise or fall of the highway.

Vehicle tested: 2009 Chevy Silverado 1500 4WD Crew Cab Hybrid
Optional Equipment: Engine block heater

Base Price: \$50,875.00
\$75.00

Front license plate mounting provisions:

\$15.00

Price as tested at Head Lake, ON:

\$50,965.00