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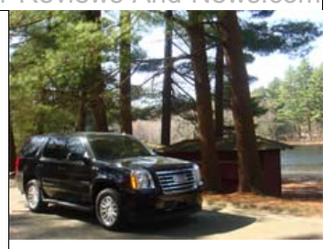
2008 GMC Yukon Hybrid



The Good :) Room for 6 to sit comfortably. Good quality interior parts. Hybrid system saves gas.

The Bad :(Super high ride height. Body dive and squat is high. Poor Gas Economy even with Hybrid. Makes you feel like you are destroying the planet.

Engine	8Cyl 6.0 Liter	Videos: A Video of this vehicle can be found at the bottom of this page. For higher quality click on the links below.
Output	367 hp @ 4100rpm 332 lb-ft @ 5100rpm	 Watch this vehicle in Quicktime format and watch on your iPod or watch our Podcast (.mov format) Click Here
Top Speed	130 mph	
0-60 mph	8.5 sec (est.)	
Weight	7,300 lbs	Download Apple QuickTime viewer here.
Price As Tested	$28,995	YouTube YouTube Channel - Click Here To download this article in pdf format to your computer, click here.

Ever since Americans let an oil man into the white house, the price at the pump has steadily increased year after year. Gas at $4 a gallon was never heard of in the US and all of us who have large vehicles must quickly change cars or face heavy depletion of our bank accounts and spending cuts on everything but the essentials. People who have long commutes are now left with are two choices: convert to a Toyota Prius or car pool to work. Even diesel is now $4.50 per gallon which takes away any incentives to buy a diesel vehicle, such as the Mercedes BlueTEC or the upcoming VW diesel models. Are oil companies controlling car companies? Is our thirst for a big SUV finally over? Is the class war of the rich against the poor going to get worse? Is our planet going to survive America's gas emissions?

These are just some of the big questions that need to be answered. In reply, some of the largest and best car companies in the world have created a new two-mode hybrid system and decided to install it in their biggest and heaviest SUV's. Instead of reducing the size of their vehicles, these manufacturers are trying to squeeze a few more miles per gallon out of them. We wonder who out there will believe this to be the right answer to the problems we face today. It's easy to quote percentages such as "50% improvement in fuel economy", which looks and sounds very impressive. However, when a vehicle goes from say 14 mpg to 21 mpg are we really doing anything to save the planet? Wouldn't it be better to aim much higher when building a hybrid technology and shoot for something in the range of 50 mpg or above, perhaps even copy the Prius, the only car out there that gives great gas mileage? We sure would not mind having different styles to what is underneath the Prius.

The new two-mode hybrid system was developed in partnership with GM, BMW, and DiamlerChrysler. All of these companies will be using this system in some of their vehicles in the near future. When it took just one company, Toyota, to bring us the hybrid car almost 10 years ago, it now takes three companies to bring us a hybrid system which is extraordinarily complicated and intended for one thing, to keep large gas guzzling SUV's on the road. America's appetite for large vehicles will never go away thanks to GM, who was the first to install it in the largest full-size SUV, the GMC Yukon. When most of us are looking towards 100 mpg why should we be

satisfied with cars making just 20 mpg and calling themselves a hybrid.

The two-mode hybrid system works in city and highway mode adding to the power of the gasoline powered engine. In very slow driving, usually under 12 mph, only the electric motor provides power which makes the GMC Yukon the biggest electrically driven vehicle on the road today. With a gross weight of 5835 pounds, it's really hard for the small electric motors to move this monster. We had to go very slow and softly touch the gas pedal to prevent the engine from turning on a heart-beat. Despite such gentle motion we found that sometimes the vehicle wouldn't go in electric-only mode which probably had to do with the batteries not being adequately charged.

The key feature in this two-mode hybrid system is GM's all-new EVT (Electrically Variable Transmission). It's a unique assembly of two 60 kW electric motors, three planetary gearsets and four traditional hydraulic wet clutches. This arrangement allows continuously variable operation, as well as providing four fixed gear ratios. This hybrid transmission can activate any of its four hydraulic clutches to allow power to be transferred via the fixed-gear ratios whenever high load conditions are experienced, such as when you tow a boat, or it can turn off four cylinders in the engine and power the car with help from the electric motors when you are cruising at low speeds to save on gas. This is all done automatically because the system monitors torque-based data from the powertrain and then determines the most efficient means of moving the vehicle either via electric power, gasoline engine power or a combination of the two. This hybrid transmission is like having two transmissions in one; a continuously variable drive for light-load conditions and fixed-ratio drive for high-load situations. An interesting note is that when you drive the vehicle in reverse it is always done in electrical-only mode, though the engine remains on it does not power the car in reverse.

Providing power to the hybrid transmission's (EVT) two electric motors is a 300-volt nickel-metal hydride battery named the Energy Storage System (ESS). This battery pack is located under the second-row seat, where it takes up virtually no additional space and does not interfere with second- or third-row ingress/egress. The fold-and-tumble capability of the second-row seat is also maintained. When the seat is flipped forward, a flat load floor is provided from the liftgate forward to the front seats when you do not have the third row installed. The battery pack is warranted for eight years/100,000 miles and requires no owner maintenance.

The batteries are not only charged automatically by the engine when you drive but also via braking. By using one or both of the EVT's electic motors as a generator, braking energy is converted to electrical energy and stored in the battery for future use to propel the vehicle.
The regenerative brakes are used along with the standard hydraulic brakes to slow the vehicle and/or bring it to a stop. Depending on the amount of braking force required, the hydraulic brakes may not even be used, such as during mild deceleration when slowing to allow space for merging traffic on a highway. The battery system in the Yukon also provides power to the air conditioning compressor and the Accessory Power Module (APM), which converts the high-voltage supply to 42 volts for the electric power steering system, and 12 volts for the vehicle battery and other 12-volt electrical accessories in the car.

Another important difference in the hybrid Yukon over its gasoline-only brother is the change in final drive ratio from 3.73 to 3.08. This alone reduces engine speed on the highway and is responsible for a significant part of the improved fuel economy. At normal cruising the engine rpms are around 1200 and this really helps keep highway fuel economy numbers closer to 20 mpg. In our highway only tests we did achieve 19 to 20 miles per gallon.

In the hybrid Yukon, when the vehicle comes to a stop such as at a stop light, the engine turns off even if it's for a few seconds. GM calls this the Auto Stop mode. Once the vehicle reaches 0 mph, the engine automatically shuts down. Then when you step on the gas it quickly turns back on without any delays or noticeable hiccups. The entire process is so smooth that you don't even notice your driving an electric/gas vehicle, except of course, for the large green badges plastered all over the car.

The hybrid Yukon's Vortec 6.0L V-8 engine was selected over GM's existing 5.3L Gen IV V-8 engine and heavily modified to get better performance and fuel economy. The 6.0 L V-8 gasoline engine has more favorable torque characteristics than its smaller-displacement cousin. This was especially important because GM engineers adapted the 6.0L V-8 to operate with late intake valve closing (Atkinson-cycle combustion process) for reduced pumping losses and higher gas mileage. Using flat-top pistons and cylinder heads borrowed from GM's 5.3L high-output V-8 and with a 10.8:1 compression ratio, the Vortec 6.0L V-8 produces 332 horsepower (248 kW) at 5100 rpm and 367 lb.-ft. of torque (497 Nm) at 4100 rpm. In addition, the Vortec 6.0L engine features variable valve timing to control late intake closing, and Active Fuel Management, which allows four of the eight cylinders to be shut off during periods of light load. Gasoline-only V8 Yukon models with Active Fuel Management also benefit from the economy of V4 operation, but because they lack power from the electric motors, they can't remain in V-4 mode for very long.

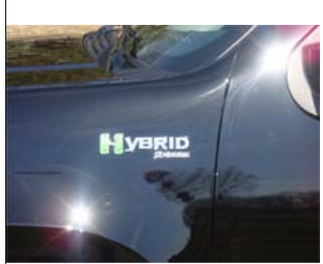
To start the all-new Yukon Hybrid, just turn the ignition key to start as you would any other vehicle. The gasoline engine will initially start and run, but may shut off soon after it has warmed up if you don't start driving right away. As long as you are not moving or going less than 10 mpg the engine will, in most cases, remain shut-off while the electric motors do all the work. Pushing the pedal ever so lightly will cause the engine to start up.

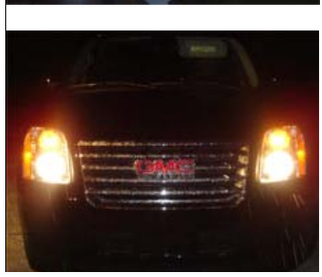
With the engine on or off, it is quite difficult to hear any noise coming from the engine bay while inside a Yukon due to good noise supression done by GMC. When the engine is shut down, the rpm needle points to a Auto Stop position, giving you an indication when the vehicle is being powered only by electricity, which is the more efficient propulsion method.

Because the Yukon Hybrid is powered through an electrically variable transmission, shifting is nearly imperceptible. Even during fixed ratio shifts, the smooth, computer-controlled clutch engagements and disengagements are barely noticeable by vehicle occupants. The overall effect is of one smooth and even power flow as the vehicle is accelerated from a complete stop to a cruising speed.

After spending a week in the Yukon Hybrid we came away quite disappointed. Seeing the vehicle on day one with the words Hybrid marked in bold letters along the side of the doors and on the top of the front windshield instantly brought up rosy images of the new green GM saving the planet and doing its part to help the common man stay away from the gas station. Boy were we in for a shock as soon as we starting driving. Our average in mixed driving was at a miserly 15 miles per gallon. Driving carefully and not pressing hard on the gas can get you to highway speeds because power comes from two motors. However it is not very fun slowly getting to 65 mph. The fun comes from going fast quickly. If you ever laughed at all those Prius drivers going so slow on the highway, imagine the sight of this big tank going slower than a bicycle on small town roads. Being very careful driving in town, 16 mpg was the best we averaged. If you are doing only highway driving, 20 mpg can be achieved if you are not going into the mountains.

The fact that this Yukon Hybrid costs about $10,000 more than a gasoline version is a major setback for GM. It would take a driver who puts in 12,000 to 15,000 miles almost 10 years to save that much in gasoline. Perhaps it would be better for someone to fit their own car with a hydrogen electrolyzer using water as fuel. People are making these electrolyzer kits for only a few hundred dollars with generic parts available at most hardware stores. You can find videos on YouTube by searching for "water car". The hydrogen is pumped directly into a normal gasoline engine and the output from your exhaust pipe is water vapor. Hydrogen is very clean and since it's created from the separation of water (H2O) and then turns back into water, it's a perfect renewable energy source. You can even get the electricity needed for this from green sources. This method of powering your car has worked for a lot of people but it would really take off if manufacturers like GM free themselves from the tight-control oil companies have on their executive boardrooms. It makes you wonder if the car companies are truly controlled by big oil when they don't use renewable energy sources that this planet has provided us from the very beginning.





The 2008 Yukon Hybrid is a very big vehicle with an overall length of 202 inches and a width of 79 inches. It stands tall at 77 inches and looks quite massive next to popular new cars such as the Honda Fit. Exterior styling is bolder and bigger than ever before as well. The front end is large and features a full wrap around bumper and lower spoiler for more aerodynamics. A larger chrome topped grille opening allows for increased airflow to the radiator and engine compartment. The large headlights almost cover the entire height of the front end and we wished they had a more stylish beam design as in the Cadillac CTS. On the side you have steps that you definitely need to get into the Yukon due to its significant height. A new aluminum hood and liftgate with fixed glass replaces the standard steel units. Substituting an aluminum front bumper beam saved additional weight, as well as using low-mass, aero-efficient 18-inch cast aluminum wheels.

The interior of the Yukon is equally large and more refined than before. Use of higher quality materials on the dash board and the roof lining does make a big difference. Gone are the flat plastic trim pieces, replaced with a leather look material with texture and grain. Use of wide wood trim pieces also looks nice. The steering wheel and seats as well as center arm rest are leather covered for a good feeling. Overall the styling is very GM with large buttons, large seats, and large consoles. The rear seats are even fixed higher than the front for better exterior views. Sitting in the Yukon feels like riding in a semi tractor trailer.

The Yukon Hybrid features all the amenities that you would expect in this price range of vehicle but is missing some basics as well. Front seats lack full power control, also missing is memory for the driver's seat. Only the seat bottoms are powered with the backrest being manually adjustable. Only the driver's window is automatic for up and down positions, not all four as we would like. Front seats are heated with a switch on the door which can separately heat the backrest only or both the backrest and the bottom seat cushion. We found the system did not work effectively at heating the seats even in high mode; they just did not get warm. The steering wheel feels good but is not very thick. Located on it are controls for the stereo and cruise control as well as a voice control button. The voice recognition system is truly in need of help as it did not even recognize the word 'help'. You can control the stereo by saying commands such as 'FM' but it did not really work well for us.

A key visual cue found on all models is the unique hybrid gauge cluster, which includes a special tachometer incorporating an Auto Stop position just above 0 rpm that indicates when the gasoline engine is in shut-down mode. Also part of the cluster, a new analog economy gauge located to the left of the tachometer helps the driver maintain the most efficient driving style.

The central console houses the navigation system and stereo as well as climate system controls. This screen also shows you how the Hybrid system is working (watch our videos for a good view of all the action). We found the Bose stereo system to produce good quality sound although bass was lacking. A good feature is that you can program loads of presets, up to six screens worth. The XM satellite radio worked well and was quick at changing stations and displaying them on the screen. You also have an input jack here so you can play music from any audio device such as an IPOD or MP3 player. DVD's can be placed into the slot in the stereo system in the front cabin and the driver can view the movie while the car is stopped. You can also view movies in the rear optional screen with headphones if you like. RCA jacks enable you to plug in anything you would like into the rear compartment system, be it a Sony Playstation or a 6-disc DVD changer.

The navigation system is not as good as that on other GM makes but it does allow you to put in point of interest names such as hotels and restaurants in the area which is useful. Having a phone book in your car is very useful when it also guides you to your destination. Not having any direction information in the instrument cluster makes you have to look down at the main screen which takes your eye off the road. Having a larger screen with clearer directions would help tremendously.

The climate control system is a dual zone automatic system with a third zone for rear seated passengers. Rear cabin passengers also have an automatic setting so they can adjust temperature or change everything from direction to temperature and fan speed. Many air vents up on the roof chill the rear cabin very quickly. We found the

system to be very powerful and the controls were very simple to use. The passenger seats in the second row are set quite high allowing for a good view of the road ahead. They are large and flat and feel very comfortable much like a sofa at home. The Yukon is a vehicle that works well when the driver is smoothly driving without any abrupt moves.

The third row of seats are large and formidable in their bulk. Adults can be seated easily though legroom is lacking and your knees are up high while seated. The seats must be flattened and tilted forward for there to be any usable cargo space. The large rear lift gate is not powered and so closing and opening it is quite difficult. GM should have definitely put in a powered door system considering the high price of the vehicle.

Standard safety features include StabiliTrak electronic stability control; dual-stage frontal air bags; head curtain side-impact air bags (rollover-enabled); front seat belt pretensioners; vehicle-to-vehicle compatibility brackets on the front frame rails and the OnStar safety and security system.

The OnStar service in the Yukon Hybrid includes a one-year subscription to the Directions & Connections package, which offers Turn-by-Turn Navigation. Also included is OnStar's Safe & Sound package, which sends a signal to an OnStar advisor in case of an accident. There are also remote door unlock, stolen vehicle recovery and other emergency support services. The telephone now works though the OnStar voice recognition system instead of Bluetooth pairing. Therefore you cannot use your current phone with the car's microphone and speakers, this is a big flaw.

Our vehicle starts off at a base price of $52,855. Optional is the rear seat entrainment system for $1,295. A power sliding moonroof is was an additional $995. Add to this a $900 destination charge and you have a total sticker of $56,045.

We think that the only person looking for such a large SUV should be a family of more than 4 children and one with a large boat to tow in daily driving. That eliminates about 99% of all people in america. You would not want to drive this car daily as for the money you could have a Honda fit getting 44 miles per gallon for the misses and a small truck for towing your boat. Why mix those 2 things together? With gas so costly and the cost to our climate and planet not factored into that price, there really is no reason to have this vehicle. Hopefully boats will come with a self powered caddy running on electricity so we will not have to buy something like this ever. For someone who wants just one car to do it all then perhaps the Yukon Hybrid is a step in the right direction.

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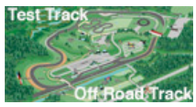
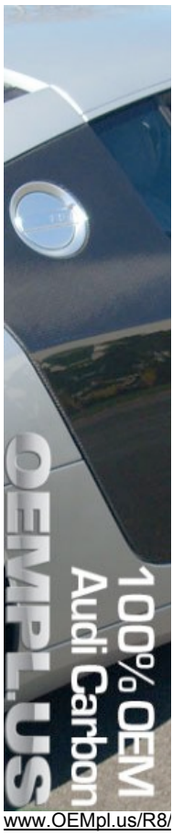
PRICING	INVOICE	RETAIL
Base Pricing	$49,155	$52,855
Rear Seat DVD Entertainment System	$1,075	$1,295
Power Sunroof	$826	$995



Traffic Cameras & Delays

National Traffic



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COMPARISONS	2008 GMC Yukon Hybrid 4dr SUV 4WD (6.0L 8cyl gas/electric hybrid 4A)	2008 Lexus RX 400h 4dr SUV AWD (3.3L 6cyl gas/electric hybrid CVT)	2008 Toyota Highlander Hybrid Limited 4dr SUV AWD w/3rd Row (3.3L 6cyl gas/electric hybrid CVT)	2008 Mercedes-Benz GL-Class GL320 CDI 4dr SUV AWD (3.0L 6cyl Turbodiesel 7A)	2008 Porsche Cayenne Tiptronic 4dr SUV AWD (3.6L 6cyl 6A)
MSRP	$52,855	$42,680	$39,950	$53,400	$46,400
Invoice	$49,155	$37,983	$35,754	$49,662	$40,372
Basic	3 yr. / 36000 mi.	4 yr. / 50000 mi.	3 yr. / 36000 mi.	4 yr. / 50000 mi.	4 yr. / 50000 mi.
Drivetrain	5 yr. / 100000 mi.	6 yr. / 70000 mi.	5 yr. / 60000 mi.	4 yr. / 50000 mi.	4 yr. / 50000 mi.
Roadside	5 yr. / 100000 mi.	4 yr. / Unlimited mi.	Being Researched / Being Researched	Unlimited yr. / Unlimited mi.	4 yr. / 50000 mi.
Rust	6 yr. / 100000 mi.	6 yr. / Unlimited mi.	5 yr. / Unlimited mi.	4 yr. / 50000 mi.	10 yr. / Unlimited mi.
Base Engine Type & Cylinders	V8	V6	V6	V6	V6
Base Engine Displacement	6.0 liters	3.3 liters	3.3 liters	3.0 liters	3.6 liters
Valvetrain	16 Valves overhead valves (OHV)	24 Valves double overhead cam (DOHC)	24 Valves double overhead cam (DOHC)	24 Valves double overhead cam (DOHC)	24 Valves double overhead cam (DOHC)
Horsepower	332 hp @ 5100 rpm	268 hp @ 5600 rpm	270 hp @ 5600 rpm	215 hp @ 4000 rpm	290 hp @ 6200 rpm
Torque	367 ft-lbs. @ 4100 rpm	Being Researched	212 ft-lbs. @ 3600 rpm	398 ft-lbs. @ 1600 rpm	273 ft-lbs. @ 3000 rpm
Electric Motor Battery Type	nickel-metal hydride	nickel-metal hydride	nickel-metal hydride	Not Available	Not Available
Regenerative Braking System	regenerative braking system	regenerative braking system	regenerative braking system	Not Available	Not Available
Horsepower (Electric Motor)	Being Researched	165 hp @ 4500 rpm	167 hp @ 4500 rpm	Being Researched	Being Researched
Torque (Electric Motor)	Being Researched	246 ft-lbs. @ 0 rpm	247 ft-lbs. @ 0 rpm	Being Researched	Being Researched
Electric Motor Output (Kilowatts)	120	123	123	Not Available	Not Available
Horsepower (Rear Electric Motor)	Being Researched	67 hp @ 4610 rpm	68 hp @ 4610 rpm	Being Researched	Being Researched
Torque (Rear Electric Motor)	Being Researched	96 ft-lbs. @ 0 rpm	96 ft-lbs. @ 0 rpm	Being Researched	Being Researched

Rear Electric Motor Output (Kilowatts)	Not Available	50	50	Not Available	Not Available
Horsepower (Gas Motor)	Being Researched	208 hp @ 5600 rpm	209 hp @ 5600 rpm	Being Researched	Being Researched
Torque (Gas Motor)	Being Researched	212 ft-lbs. @ 4400 rpm	212 ft-lbs. @ 3600 rpm	Being Researched	Being Researched
Driven Wheels	four wheel drive	all wheel drive	all wheel drive	all wheel drive	all wheel drive
4WD Type	part time	part time	Not Available	Not Available	Not Available
Independent Suspension	front	four-wheel	four-wheel	four-wheel	four-wheel
Air Filtration	Not Available	interior air filtration	interior air filtration	interior active charcoal air filter	interior active charcoal air filter
Premium Brand Speakers	Bose	Mark Levinson - Optional	JBL - Optional	harman/kardon - Optional	Bose - Optional
Total Number of Speakers	9	8	6	8	12
SPECS					
Max. Cargo Capacity	109 cu. ft.	85 cu. ft.	94 cu. ft.	83 cu. ft.	63 cu. ft.
City	20 mpg.	26 mpg.	27 mpg.	18 mpg.	14 mpg.
Highway	20 mpg.	24 mpg.	25 mpg.	24 mpg.	20 mpg.
Length	202 in.	187.2 in.	188.4 in.	200.6 in.	188.9 in.
Width	79 in.	72.6 in.	75.2 in.	75.6 in.	75.9 in.
Height	74.8 in.	66.4 in.	69.3 in.	72.4 in.	66.9 in.
Weight	5835 lbs.	4365 lbs.	4641 lbs.	5296 lbs.	4949 lbs.
Wheel Base	116 in.	106.9 in.	109.8 in.	121.1 in.	112.4 in.
Ground Clearance	9 in.	7.1 in.	7.3 in.	7.8 in.	8.6 in.
Interior	Yukon Hybrid	RX 400h	Highlander Hybrid	GL-Class	Cayenne
Front Headroom	41.1 in.	Being Researched	40.6 in.	40.1 in.	39.7 in.
Rear Headroom	34.1 in.	Being Researched	39.8 in.	40.6 in.	Being Researched
Front Shoulder Room	65.3 in.	57.9 in.	59.7 in.	58.4 in.	58.5 in.
Rear Shoulder Room	65.2 in.	57.1 in.	59.3 in.	58.9 in.	Being Researched
Front Hip Room	64.4 in.	55.6 in.	56.7 in.	Not Published	Being Researched
Rear Hip Room	60.6 in.	55.1 in.	56.3 in.	Not Published	Being Researched
Front Leg Room	41.3 in.	42.5 in.	43.2 in.	40.3 in.	Being Researched
Rear Leg Room	39 in.	36.4 in.	38.4 in.	39.5 in.	Being Researched
Maximum Luggage Capacity	16.9 cu. ft.	38.3 cu. ft.	10.3 cu. ft.	14.3 cu. ft.	19.1 cu. ft.

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