

# All-New 2013 GS 450h Illustrates Dynamic Hybrid Performance

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TORRANCE, CALIF. (August 23, 2012) — The all-new Lexus 2013 GS 450h continues to be a leader in the hybrid-powered luxury sport sedan category it created six years ago. Combining bold, dynamic styling, precise handling, 338 total system horsepower, and a spacious interior, the GS 450h offers the best of all worlds with its performance, connectivity and comfort features.

The Lexus Hybrid Drive system features an ultra-smooth running, next generation D-4S direct and port fuel injection system with an Atkinson cycle 3.5-liter V6 engine mated to a compact, high-output, water-cooled permanent magnet electric motor powered by a high performance nickel-metal hydride battery pack. The two powerplants drive the rear wheels both independently and in tandem, as needed. Fuel consumption is improved by more than 35 percent versus the previous generation with EPA-estimated ratings of 29 mpg city, 34 mpg highway and 31 mpg combined.

The GS 450h also has five driving modes that can be operated by toggling the new Lexus Drive Mode selector. In addition to the Normal mode, the following settings let the driver customize the driving experience.

- ECO mode revises throttle mapping, seat heating, and climate control systems for better fuel economy. In ECO mode, meter lighting changes to blue.
- EV mode allows the vehicle to be driven short distances, under certain circumstances, using only the electric motors.
- SPORT S mode revises throttle mapping and transmission shifting priorities to fully exploit the capabilities of the powertrain. In SPORT S mode, meter lighting changes to red.
- SPORT S+ mode engages handling enhancements via a sport setting of the adaptive variable suspension, steering system, and Vehicle Dynamic Integrated Management (VDIM) together with the powertrain enhancements of SPORT S mode.

A next-generation Remote Touch with one-push confirmation is standard and enables smooth, intuitive control of climate, audio, phone controls, optional navigation system and more. A standard rear back-up camera helps add security and convenience.

Navigation-equipped vehicles feature Lexus Enform<sup>®</sup> with App Suite. The App Suite leverages customers' mobile phone technology to provide a new level of connectivity and information management. Users can conduct local searches through Bing<sup>™</sup>, utilize voice-enabled apps to make restaurant reservations through

OpenTable<sup>®</sup>, get movie tickets via MovieTickets.com, tap into internet radio, including Pandora<sup>®</sup> or iHeartRadio, search business reviews on Yelp and check in on Facebook places. A one-year trial subscription is included for the App Suite.

## **Engine/Transmission/Drivetrain/Performance**

- With a total system power output of 338 horsepower, the GS 450h accelerates effortlessly from 0-60 mph in 5.6 seconds.

- Certified as a Super-Ultra Low Emissions Vehicle (SULEV) which has lower emissions than clean diesels.
- Engine noise, vibration and friction have been lowered through the adoption of lightweight timing chain technology.
- The system's regenerative braking operation range has been expanded, contributing to further improvements in fuel efficiency.
- A new stacked battery configuration maximizing luggage space allows the 2013 GS 450h to have more cargo area than the previous generation GS 350.
- Improved fuel consumption is achieved through a high compression ratio of 13:1, a new mid-port intake tumble generator and the adoption of a Lexus four-stroke, direct injection technology, D-4S.
- With one injector installed in the combustion chamber and a second mounted in the intake port, D-4S combines the strengths of both direct and port injection, realizing optimum engine efficiency throughout the power band and improving torque across the rev range, while minimizing fuel consumption and emissions.
- The D-4S system features new slit-type injector nozzles with a modified port shape, a higher fuel pressure for more efficient combustion, and idle port injection for improved NVH characteristics.
- The cooling performance of the hybrid system's Power Control Unit (PCU) helps reduce fuel consumption and has been improved through the adoption of dual cooling paths and a single-piece, integrated DC/DC converter.
- The PCU boosts motor drive voltage to a maximum 650V in Sport mode and limits it to a maximum of 500V in Eco mode under normal driving conditions where maximum output is not required. The motor is driven at lower voltage to provide a more environmentally advanced driving performance to help enhance fuel efficiency.

### **Chassis/Body/Suspension/Tires/Brakes**

- Engineers created a more rigid new platform by increasing the number of spot welds and adding laser welds in very specific locations.
- The track, wider by almost two inches, works in combination with a revised suspension design to help ensure a more solid stance and superior cornering performance.
- Front and rear aluminum control arms help reduce unsprung weight and results in significant improvements in agility, roll damping, ride comfort, body control and steering precision.
- Ventilated disc brakes featuring four-piston aluminum front calipers are endowed with the latest electronic enhancements to help provide braking balance and control.
- The GS 450h's Electronically Controlled Braking system characteristics have been modified to provide greater responsiveness from the first touch of the pedal.
- The GS 450h features standard 17-inch alloy wheels paired with 225/50R17 tires, and optional 18-inch alloy wheels equipped with 235/45R18 tires.
- The standard Vehicle Dynamics Integrated Management (VDIM) anticipates loss of vehicle control and governs all of the vehicle's dynamic handling systems – the Anti-lock Braking System, Brake Assist (BA), Vehicle Stability Control (VSC) and Traction Control (TRAC) -with the electronic throttle control system. VDIM employs these systems collectively and seamlessly to help make corrections while allowing higher dynamic capability. The system also provides a limited slip differential effect

### **Safety/Security Features**

- The GS is standard equipped with 10 airbags, including a knee airbag for both driver and front passenger, seat-mounted side airbags for outboard rear seats, and side curtain airbags for all four outboard occupant seating positions.

- New Whiplash Injury Lessening front seats reduce the space between the occupant's head and headrest, to help limit excessive head movement, and help decrease the severity of whiplash-type injuries in certain types of rear end collisions.
- Other optional equipment includes a Night Vision System that enhances driver visibility at night; Heads Up Display; a Blind Spot Monitor that helps detect vehicles in rear/side blind spots; and Lane Keep Assist (LKA) with Lane Departure Warning (LDW).
- Available options to help further enhance occupant safety include a Pre-Collision System (PCS), which uses the Dynamic Radar Cruise Control System to provide early warning of upcoming objects that might result in a collision. The system uses an infrared camera with new scanning technology to monitor the driver's eyes. In the event that the driver does not appear to be looking forward when a collision appears imminent, the system will initiate the warning at an earlier threshold. If the driver still does not respond and make the appropriate maneuver, the system will initiate braking intervention up to 1.2 seconds prior to impact, designed to help lessen the severity of the collision. With available Lexus Dynamic Handling, PCS will help further mitigate the occurrence of a collision.

### **Exterior Design**

- The signature spindle grille with its trapezoidal contours fully integrates into the aggressive front bumper allowing for efficient airflow.
- Deep-set, high-tech headlamps with a projector beam design and L-shaped LED daytime running lamps further express the vehicle's dynamic character.
- Exclusive to the hybrid model is an available three-lamp design that combines high and low beam LED lamps and turn signals in a single horizontal row.
- Like the GS 350 model, the GS 450h adopts L-shaped LED tail lamps and stabilizing fins in the bumper lower section.
- The GS 450h can also be distinguished by concealed tailpipes for a clean, hybrid look and Lexus' signature blue hybrid badging.

### **Interior Design**

- Engineers improved the driver's seating position for increased comfort, better forward visibility and overall command of the road by redesigning the seat frame and changing the steering column angle from 23 to 21 degrees.
- Standard equipment includes a new energy-saving auto climate control system, called S-Flow, that uses the occupant-detection system to focus airflow only to the front area where passengers are actually seated, a first-in-class technology.
- The driver and front passenger will enjoy the clean appearance of the new high-resolution central control display.
- A new analog clock with LED indicators, carved from a single ingot of aluminum for a smooth consistent look, adds a unique touch, at once both modern and traditional.
- A few notable differences between the gas and hybrid model include a bamboo steering rim, and bamboo interior accents, which reinforces the sustainability of the GS 450h, and the hybrid driving monitor.

### **Luxury/Comfort/Convenience**

- Standard entertainment and connectivity advancements include enhanced Bluetooth® capability with automatic phonebook download and streaming audio.
- Standard DVD audio and video compatibility, MP3 sound enhancement, 5.1 simulated surround-sound from normal two channel sources such as MP3 files and CDs, and a high-resolution eight-inch central control display centrally located high up in the instrument panel.

- HD Radio™ with iTunes tagging and a three-month trial subscription to SiriusXM™ Satellite Radio are standard.

### **Luxury Options**

- The Luxury Package includes Adaptive Variable Suspension; an Adaptive Front Lighting System; unique high gloss espresso wood ornamentation; semi-aniline leather, 18-way power driver and front passenger seats with memory and articulated back, side bolster and thigh support controls; four-way lumbar; rear HVAC and audio controls; rear manual side sunshades; 18-inch alloy wheels; and wood and leather-trimmed steering wheel.
- By adding the optional navigation system, GS owners can enjoy an industry-first 12.3-inch, split-screen, high-resolution multi-media display which is large enough to support simultaneous, split-screen viewing of a large map display, plus audio, climate or other vehicle information.
- The available 17-speaker Mark Levinson premium surround sound audio system has 7.1 channel surround-sound through 10 channels using a new class D Digital amplifier with a clean 835-watts from 20-20,000 hz at only 0.01 percent total harmonic distortion.

### **Warranty**

- 48-month/50,000-mile basic limited warranty with roadside assistance for 48 months/unlimited miles.
- 72 months/70,000 miles powertrain and restraint system coverage.
- 72 months corrosion perforation protection, regardless of mileage.
- Eight years/100,000 miles hybrid-related components, including the HV battery, battery-control module, hybrid control module and inverter with converter.