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## GM's efforts in fuel efficiency and pollution reduction

by Michel Deslauriers, Auto123.com

**Montreal, Quebec** - Yesterday, General Motors presented their measures for saving fuel and reducing air pollution. It's more of a reminder, since a lot of stuff shared with us was announced previously, but it's nice to get a condensed summary of their efforts.

First, some interesting numbers. Smog in Canada is caused by a variety of sources. In 2005, industries were responsible for 37% of smog, while 9.5% was caused by cars and light-duty trucks. What's important to know is that new vehicles only represent 0.1% of what creates smog. That means your uncle's 1982 Grand Prix is a very bad polluter, even if he washes and waxes it every weekend.



Frédéric Racine, GM Canada District Sales Manager (Photo: Philippe Champoux, Auto123.com)

As for greenhouse-gas emissions (GHG), 46% is caused by stationary fuel combustion. Cars and light trucks account for 12.5%, but new vehicles are responsible for only 1% of GHG emissions.



Fatima Dharsee, Car Heaven Program Manager (Photo: Philippe Champoux, Auto123.com)

So, the greatest measure in reducing air pollution is to take all the cars and trucks built before, say, 1990 and scrap them. Fortunately, the Clean Air Foundation and GM are partners in the Car Heaven program, which promotes the retirement of older, higher polluting vehicles. When you turn in your rustbucket to Clean Air, GM will give you a \$1,000 credit on the purchase of one of their new vehicles. Since GM launched this initiative, about 20,000 people have taken advantage of that credit, so the plan seems successful.

Also, since its introduction in July 2000, the Clean Air program sent over 45,000 rustbuckets to the crusher. According to program manager Fatima Dharsee, more than 1,700 cars have been taken off the roads of Quebec since last summer. More information can be found on their website at [www.carheaven.ca](http://www.carheaven.ca).

Now, what tricks does General Motors have up its sleeve to reduce fuel consumption and air pollution? Active Fuel Management, E85 Ethanol-fueled vehicles, hybrid powertrains and fuel cell research are among the most important ones.

Formerly known as Displacement on Demand, Active Fuel Management shuts off half the cylinders of the engine under light loads, such as pattering at low speeds on the highway. The 5.3-liter V8 then becomes a V4 and consumes less fuel, and can reactivate the cylinders that were on break in a fraction of a second. GM's 3.9-liter V6 also gets AFM for 2007, which shuts off 3 of 6 cylinders when full power is not required.



2007 GMC Sierra SLE 4x4 with Active Fuel Management (Photo: Philionne Champoux)

management (Photo: Philippe Champoux, Auto123.com)

The first car I tested that was equipped with this cylinder-deactivation system was the 2005 Pontiac Grand Prix GXP. At the time, I was disappointed about not having a light that turns on to indicate that I was running on half of the 5.3-liter V8's cylinders. GM's new models now have this indicator, which can be found next to the fuel-consumption average readout.



2007 Chevrolet Impala (Photo: Philippe Champoux, Auto123.com)

The 2007 Chevrolet Impala will feature Active Fuel Management with its 3.9-liter V6, and a bunch of other models in GM's divisions get AFM with their 5.3-liter V8 engines, including the redesigned Chevrolet Silverado and GMC Sierra, which is reaching showrooms this week. By the way, I had the opportunity to briefly drive a brand-new 2007 Sierra SLE, but we'll have full coverage on GM's full-size pickups later this month on Auto123.com.

The General is investing heavily on E85 Ethanol technology. E85 is a mix of 85% ethanol and 15% gasoline, and 15 GM models are now equipped to run on either E85, regular unleaded gasoline or a combination of both. According to District Sales Manager Frédéric Racine, ethanol burns cleaner, is renewable (it's made with corn), and can greatly reduce greenhouse-gas emissions. E85-enabled vehicles will be identified by "FlexFuel" badging as well as a yellow-colored gas cap.



2007 Chevrolet Impala (Photo: Philippe Champoux, Auto123.com)

Although Ethanol use is slowly growing in the United States, it doesn't seem to be the case here. The number of gas stations that pump E85 in Canada is--and this is not a joke--one. That's right, Ottawa is the only city in Canada where consumers can fill up their cars with Ethanol. GM is pushing hard for the government to allow widespread use of Ethanol, but I don't think that will happen anytime soon. Here's my suggestion to GM: hand-pick some of your bigger dealerships in Canada's major cities and install E85 fuel pumps there for Ethanol-enabled cars and trucks.



2007 Saturn VUE Green Line (Photo: Philippe Champoux, Auto123.com)

GM has 3 different types of hybrid powertrains. The first, a "Light Hybrid" application that can be found in Chevrolet Silverado and GMC Sierra pickups, uses an electric motor that assists the regular V8 engine in electrical applications, such as replacing the starter and alternator. The normal "Hybrid" powertrain is the one found in the new VUE Green Line. It consists of a battery that assists the engine in powering the SUV, and the system turns off the 2.4-liter 4-cylinder when the vehicle is at full stop or coasting.

The third type is what GM calls the "Two-Mode Hybrid" setup, which allows the vehicle to run at low speeds on electric power alone, while the engine also gets Active Fuel Management to reduce fuel consumption even more. The Two-Mode Hybrid also shuts off the engine at full stop and while coasting. The 2008 Chevrolet Tahoe and GMC Yukon SUVs will be the first passenger vehicles to get this powertrain.

One relevant application for the Two-Mode Hybrid system is currently being tested in GM-built city buses, which is a good idea since it annually saves several thousand liters of fuel per bus, and reduces emissions all the while. GM's hybrid buses will turn up in the coming weeks on the streets of Vancouver and Toronto.



2007 Saturn VUE Green Line (Photo: Philippe Champoux, Auto123.com)

GM wants to build the world's largest fuel-cell vehicle fleet. In the fall of 2007, over 100 Chevrolet Equinox SUVs will be converted to run with fuel cells and will be distributed to GM customers for real-world testing.



2008 Chevrolet Tahoe Two-Mode Hybrid  
(Photo: Philippe Champoux, Auto123.com)

What's to expect from GM in the coming years? As mentioned earlier, the Two-Mode Hybrid versions of the Tahoe and Yukon are on their way, followed by an Escalade and the Silverado/Sierra pickups. Also, hybrid versions of the Chevrolet Malibu and Saturn Aura are planned. General Motors will eventually have 12 hybrid models on the market, although no deadline has been set.



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