

HyTronX Corporation

HYDROGEN – INJECTION TECHNOLOGY

HTX-EnerG™ System

Presentation to:

La Commission sur les enjeux énergétiques du Québec

Objective: To introduce “hydrogen-injection” a game-changing technology that effectively reduces carbon emissions in the transport and stationary generating station sectors.

HyTronX Corporation manufactures the HTX-EnerG™ Hydrogen-Injection System, an on-board and on-demand device, made in Quebec and available immediately, that creates hydrogen and oxygen gases, through electrolysis. The system does not require any hydrogen storage tanks or nationwide infrastructure of hydrogen fueling stations. While hydrogen injection is not new, the current version of the HTX-EnerG™ System is market ready and is the catalyst to a cleaner environment. It is a direct result of over six years of Research & Development, trial and error and a lot of blood, sweat and tears – but it’s now ready for commercialisation.

Whether you believe or do not believe that the world has a problem with climate change or global warming, all of us must do whatever we can to reduce greenhouse gas emissions. Just recently the IPCC issued a report conclusively declaring that greenhouse gases are in fact, man-made. In recent years the world has seen an increase in severe weather, droughts, melting arctic ice, heat waves, hurricanes, tornadoes, and so on. Believer or pundit, the proof is there.

Governments around the world continually introduce legislation to lower emissions in an effort to reduce greenhouse gases. Other means such as cap and trade programs or carbon taxes have proven to be unpopular and difficult to implement and are not without major controversy. For this reason we salute the Quebec government for having the political will and political courage for introducing a cap and trade system in Quebec. We also recognize the cap and trade system in British Columbia as well as the efforts in other provinces including most of the state governments in the USA and in Europe. Clearly the will is there to reduce carbon emissions - all that is required is the courage and the means to do so. We owe a clean environment to our children and future generations.

There is absolutely no doubt that all world economies run on oil and there is no immediate solution that this will change, in any way, in the near future no matter how hard we try. The inefficient burning of fossil fuels in the internal combustion engine is the biggest source of greenhouse gases produced by the transport sector (42% in Quebec). The efficiency of the internal combustion engine is approximately 35% meaning that 65% of the unburned fossil-based fuels required to run the engine are discharged into the environment as unburned hydrocarbon emissions. While increased fuel efficiency (as measured by the number of kilometers travelled on a litre of gas or, in the USA, miles per gallon) is very important today with ever-rising fuel costs, the key to reducing greenhouse gases is to increase the "combustion efficiency" of the engine. While much effort and government and corporate funding has been made over the past few decades to reduce emissions to meet government emission standards with new and not so new technologies including bio-diesel, ethanol, natural gas, propane, fuel-cell, gas/electric hybrids as well as electric vehicles, virtually no effort has been made to increase the "combustion efficiency" of the internal combustion engine. The HTX-EnerG™ System was developed to do exactly that. The system addresses the problem right at the source, where the hydrocarbon emissions are actually produced, in the combustion process, by producing a near-complete burn of the fossil fuels used to power the engine. This is done by enhancing the combustion burn.

The best way to explain hydrogen-injection technology is to compare it to a turbo. Turbos are installed on vehicles to increase power and torque. The exhaust from the engine is used to spin fans at tremendously high RPMs resulting in additional air entering into the combustion process, under some pressure, increasing the oxygen in the air entering into the engine – however this also demands additional fuel to be sent to the cylinders by the ECM (vehicle computer) in order to get the extra power and torque that turbos provide. Turbos increase fuel consumption and are generally used to give smaller engines more power.

The HTX-EnerG™ machine similarly allows pure oxygen, produced by the electrolysis of water, to be injected into the cylinders through the air-intake assembly which also creates a demand for more fuel, but in this case, the hydrogen gas, also produced as a result of the electrolysis of water, is injected into the cylinders at the very same time as the oxygen and in effect becomes a partial fuel source replacing the gas that would have been required by the additional oxygen as with a turbo. The combination of 1 part oxygen and 2 parts hydrogen produced by electrolysis enhances the combustion and causes a near complete burn of the fossil fuels that are normally used. Fossil fuel is still required, albeit less fuel, for the vehicle to function. The HTX-EnerG™ System can be best described as a "gas/hydrogen hybrid" technology. Hydrogen is considered by many to be the fuel of the

future and the HTX-EnerG™ can be considered a game-changer technology to a cleaner environment.

The main purpose of the HTX-EnerG™ System is to reduce carbon emissions from internal combustion engines, however there are collateral benefits that are a direct result of the unit.

1) Lowers fuel consumption

Many factors can affect fuel consumption in a vehicle: driver habits, climate conditions, road conditions, altitude, and vehicle maintenance being the most prominent but many other “real world” factors can and will affect fuel consumption. Government fuel consumption data as posted on new vehicle stickers or on websites give fuel consumption numbers based on laboratory - based testing but are very seldom if, at any time, achieved in real-world conditions. By using hydrogen as a partial fuel source with the HTX-EnerG™ units, there is a reciprocal reduction in fuel consumption. Beta testing has shown reductions of 4.5% to as much as 25% and even higher in real-world driving.

2) Cleaner engines:

The HTX-EnerG™ produces much less carbon build-up in the engine, cylinders and exhaust system resulting in lower maintenance costs, fewer oil changes, and longer engine life.

There were many obstacles that we faced over the years when developing this technology, not only from a technical point but also with the negativity found on the internet regarding hydrogen injection, we believe, based on the inability of hundreds, if not thousands, of people who tried, without any success, to bring this technology to the marketplace. Hydrogen injection developed a bad reputation that this is a scam, a fraud, and snake oil salesmanship. We also faced the question that “this sounds too good to be true”. We were able to solve all the technical problems and now have units that work in cold weather climates (the water doesn't freeze) and uses less electrical DC output from the vehicles battery than the headlights. These, among many other challenges, have been solved and we are currently installing units on commercial vehicles. As for the naysayers and the pundits, we are able to demonstrate by a simple test, that the HTX-EnerG™ System reduces carbon emissions and in a direct correlation, fuel consumption. It is a well-known fact that the muffler and tailpipe of vehicles get extremely hot within a few minutes after the vehicle is started and no one would wrap their hand around the tailpipe as it would result in a very severe burn. This is because highly-heated

carbon particles from un-burnt fossil fuels produced during the combustion process are exhausted through the catalytic converter, the muffler and out the tailpipe making those components extremely hot and not touchable. As described above, because the HTX-EnerG™ System results in a near-complete burn of the fuel, only minute amounts of un-burnt hydrocarbons are actually exhausted out of the tailpipe and it remains cool to the touch especially at lower speeds, like in stop and go city driving. You can safely wrap your hand around the tailpipe (see photo attached). At highway speed, some regular fuel is required to power the vehicle, but less than normal. While you can still wrap your hand around the tailpipe, it will be very warm but not too hot that it would burn your skin off. This is because the HTX-EnerG™ System will only burn off part of the extra gas in the combustion process.

“ I would like to invite the commissioners or any other interested parties to witness this test and see for themselves the effects of the HTX-EnerG™ System in reducing carbon emissions” either in an idling position or an actual city-driving road test and where I will be able to wrap my hand safely around the tailpipe thereby proving that there are virtually no carbon emissions being exhausted out of the tailpipe.

Why is this technology so important to Quebec and everywhere else for that matter? Simply stated, the goal of this Commission is to address the future energy requirements of Quebec and the problems with greenhouse gas emissions and how to effectively reduce them. The HTX-EnerG™ System will reduce emissions and lower fuel consumption in vehicles or in applications where an internal combustion engine is required such as in stationary electrical generating stations using fossil fuels.

Let's look at just one example of how our technology can immediately start to benefit the environment. Current by-laws stipulate that vehicles cannot idle for more than 3 minutes or face sanctions – this in order to reduce emissions. Taxis, limousines, delivery vehicles often must idle for long periods to keep vehicles warm in winter and cool in summer and require that the engine must be running – which produces greenhouse gas emissions. With the HTX-EnerG™ System installed on these vehicles, they could actually idle for long periods without emitting large quantities of greenhouse gases. Even in city driving, these vehicles would emit less carbon emissions and as a benefit, would actually reduce fuel consumption as well – a win-win situation.

How can the government implement this? Only through legislation with some kind of subsidy to help offset the cost as is currently being offered on new hybrid or electric vehicles. It should be noted that the reduction of fuel costs would also help in offsetting the initial cost of our units. All you need is the political will and political courage to get the ball started. Consumers who are or want to be environmentally responsible would welcome this technology as they would not have to make any life-style changes in their day-to-day activities yet they will be able to say that they are contributing to reducing greenhouse gases and helping the environment – and as an incentive, they would be able to lower ever-rising fuel costs. The government could provide a subsidy to consumers as it does for new hybrid or electric vehicles, or possibly a tax credit could be applied to allow consumers to have units installed on existing older vehicles.

In conclusion, I would like to indulge the Commission to give full consideration of hydrogen-injection technology as an important step in reducing carbon emissions in their final report.

Respectfully submitted,

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