Internal combustion engines (ICE) are thermal machines that convert thermal into mechanical energy and actually ICE are the propeller most used by the population. However, with the continuous increase in petrol prices and its possible future shortage, which are very relevant factors, there is a need for studies on new technologies to suppress such problems through alternative fuel. Thus, it was studied how H2+O2 injection promoted by a HHO cell could be applied to the air-fuel (petrol) ratio, taking into account all beneficial aspects or any kind of adversity. After the studies, a comparison is made of the fuel efficiency before and after the addition of the gases in the cylinder. One of the objectives of this work is to obtain a better performance of gasoline combustion engines through a technology developed using addition of hydrogen in the air-fuel mixture with the respective fuel fossil economy. So, this study aims to clarify how an engine works through gasoline powered by hydrogen, the product of electrolysis, achieving a higher yield with economy. It is also intended to explain the consequences and adaptations needed to prepare an engine to receive this new air-fuel mixture. Obtaining H2 through electrolysis for immediate consumption is extremely important, once the risks for storing it in high pressure cylinders are very difficult and not very safe. There are two types of electrolysis: fiery and watery. Aqueous electrolysis (the subject of this study) is when the electric current passes through an electrolyte dissolved in water at low temperatures, around 113 to 212ºF, and therefore is a non-spontaneous process. In this study the dissociation of H2O is carried out. The fuel mass increase is 1.75% and the air mass increase is 0.93%. Despite the increase in molecular weights, the air-fuel ratio hardly varies and still decreases the amount of air required for combustion. There is a reduction in fuel consumption due to H2 addition, since it has high specific energy. It is concluded that the increase in energy (calories) is linked to fuel economy. With the results, it is understood that the HHO cell is a viable design because it reduces fuel consumption, but requires a proper engine preparation so that there is no damage due to increased energy during combustion.