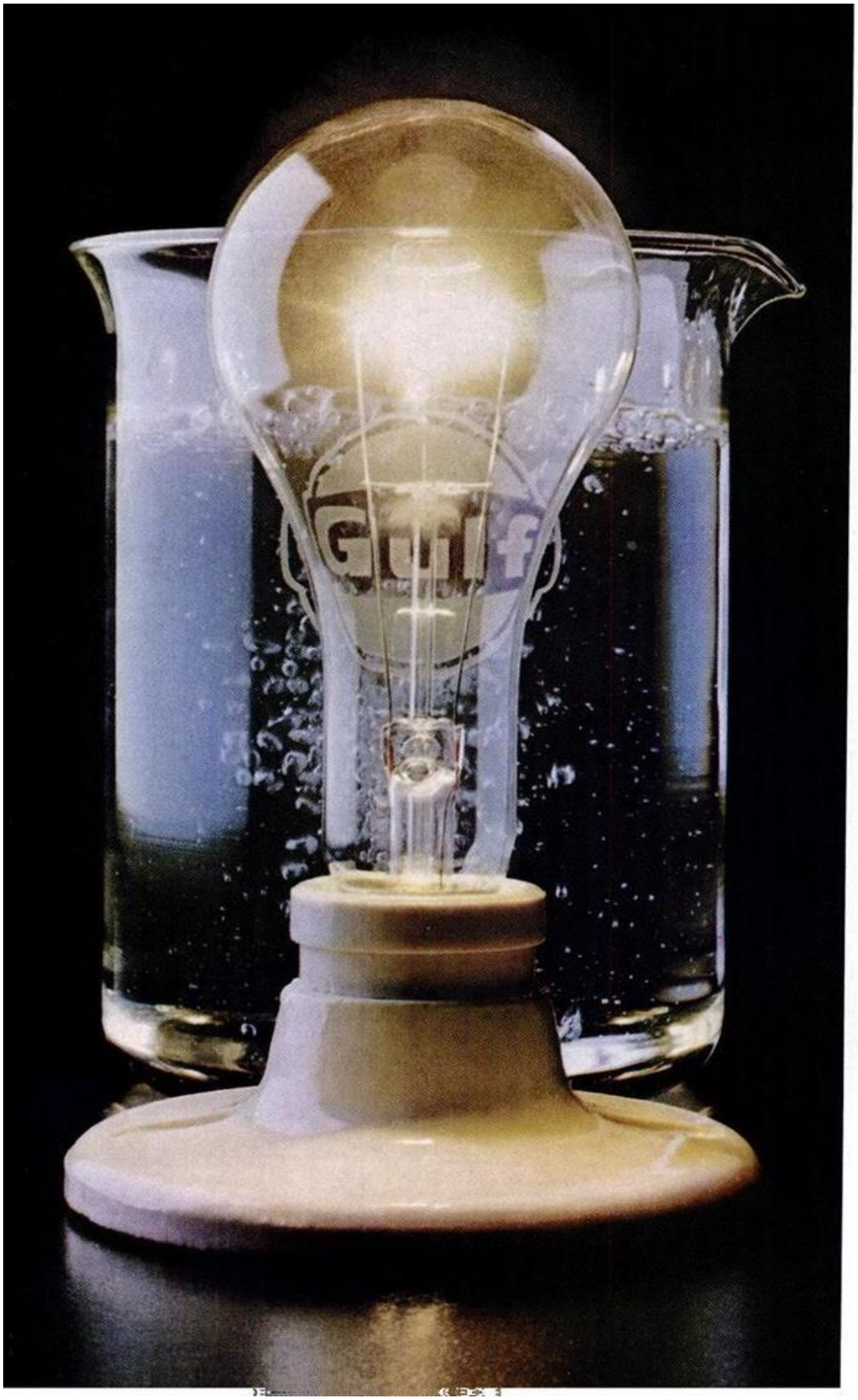
Thermochemical water-splitting not unknown to scientists from Gulf. Dr. John Norman from *General Atomic Company* is telling us of the hope for energy in water. It is ironic that an oil company is discovering the thermosplitting process initiated at 1600F, a temperature readily available in internal combustion engines that would clean up their act and make all internal combustion engines cheaper to operate, and more enduring. The article says it is expansive to extract hydrogen at 1600F, but in a motor, we have this temperature as very common, and the obtained atomic H and O are now activated to catalyze the combustion reaction.



"There are 326 million cubic miles of water on earth, and hydrogen in every drop—a natural energy resource that won't run out."

extract hydrogen from water for use as a fuel: for heating, cooking, or anything that now uses petroleum or natural gas.

"The extraction process is called thermochemical water-splitting. We know it works because we've done it. But it takes high temperatures — about 1600° F — so it's rather expensive.

"It may be the turn of the century before it becomes commercial. But it's an attractive idea. Hydrogen from a gallon of water has about half as much energy as there is in a gallon of gasoline.

"Hydrogen can be made into a liquid or gaseous fuel. It can be transmitted long distances more cheaply than electricity. And when hydrogen burns, it's converted back into water. Very tidy."

At Gulf, our first priority is to get all the oil and natural gas we can out of resources right here in America. But we're working on a lot of other ideas, too. Thermochemical water-splitting is one of them. We are also working on underground coal gasification, solar research, liquefied coal and other synthetic fuels, geothermal energy, and other alternative energy sources.

Basically the business we are in is energy for tomorrow.

Gulf

Gulf people:
energy for tomorrow.

Gulf Oil Corporation

This is the article:

"You probably remember grade-school science that water is two parts hydrogen and one part oxygen," says Dr John Norman. "Here at General Atomic Company, a subsidiary 50% owned by Gulf Oil , a project is under way to extract hydrogen from water for use as fuel: for heating, cooking, or anything that now uses petroleum or natural gas. "

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Nature of Operations

Gaz & Aquahol Corporation is an environmental company in the field of research and development into alternative sources of renewable and sustainable energy. At this time management believes the current situation in the world provides the best opportunity for Gaz & Aquahol Corp. to change the focus from R&D, and become an operating company to commercialize our products. We will concentrate on our two main technologies. Engine technology to increase fuel efficiency and to decrease greenhouse gas (GHG) emissions; and alternative fuel sources produced from sweet sorghum.

The technologies are used in conjunction with each other. **Auto Technology** Gaz & Aquahol Corp. has patent pending technologies to improve fuel consumption of vehicles, which will reduce CO2 and GHG emissions up to 50%. We have many independent studies, tests and expert opinions to confirm these findings. Our goal is to sell our units to the existing after-market of vehicles, primarily for the government fleets of cars, trucks and buses. The return on investment to the consumer for total costs of production, distribution and installation will be achieved within 6 months in improved fuel consumption. The system pays for itself in a short time, and can provide LFC a recurring revenue. Our advantage over other alternative technologies is that we are considered a flexible fuel technology. We can use almost every fuel source; regular gasoline, straight cut gasoline (75 octane), ethanol, and AQUAHOL (Ethanol/H2O). Our goal is to use AQUAHOL as the most economical fuel source. As MTBE is being banned from use, our technologies are a viable solution to produce the octane. The system is based on thermo-chemical splitting (1) hydrogen dioxide starting at 816°C (1,600° F) into its activated molecular components H + O to increase the octane within the combustion chamber. It is an internal Hydrogen-Octane Catalyst (HOC). Essentially, we are using the heat & pressure of the engine to produce the octane. Under load where more octane is needed the combustion temperature may exceed 3000° F, At that temperature about half of the water is dissociated and activated.

We are working to improve the % of dissociation through metal catalysis.

Normal Engine: regular gasoline + air » E + CO_2 + CO + HC + NOx + H_2O

Gaz & Aquahol System: flexible fuel + air + HOC » E + CO_2 + H_2O

We burn a cleaner fuel to substantially reduce HC, NOx, and CO_2 emissions. Our system qualifies as an immediate solution to pollution, and it can be implemented today on almost every type of vehicle including tractors, marine engines and generator sets. Our system is suitable for over 80% of the world's more than 300 million vehicles.

Sweet Sorghum Projects

Gaz & Aquahol Corp. has developed methods to reduce de-forestation by using sweet sorghum as an agriculture alternative to hardwood lumber for wood and pulp & paper. We have independent feasibility studies to confirm these findings. The additional benefits include grain for flour or animal feed, and sucrose for ethanol production. We intend to build an ethanol plant with each project to produce the fuel for our auto technology, and for sale as a commodity. The bio-mass will be sold for either energy, wood, and/or paper. The grain will be sold for animal feed or flour. We will demonstrate the application of our technologies through organized farming co-operatives. Our goal is to use sweet sorghum in large scale plantations, and we intend to proceed in a three step scale up program to minimize the risks for each project. Phase I: Feasibility study, (1-3 months) Phase II: Pilot project, (3-18 months) Phase III: Full scale operation, (2-5 years) At full production each project will generate employment for hundreds of people, and a long term renewable, sustainable industry for the economy. We will implement the following arrangement: Local Company / organization / co-operative or government will invest 25%-50% of the project costs in a joint venture with Gaz & Aquahol. We can access the United Nations development Program for the feasibility study, and then the World Bank for project funding for another 25%-50% in the form of a GEF grant, and IFC equity position. We already qualify with the World Bank for such grants. We are interested in projects for the developing countries of the world to create employment and a sustainable industry.

We would like to present our Mobile train and ship distillery, a great boaster for the Canadian economy and green projects. A link is more suitable here: http://www.wipo.int/pctdb/en/ia.jsp?IA=CA2008001083
We also have the TRI-BRID ENGINE USING ELECTRICITY FLEX FUELS and the DUAL H20 ENGINE RECYCLING SYSTEM http://www.wipo.int/pctdb/en/ia.jsp?IA=CA2008001084

We have a small starter video at YouTube: http://www.youtube.com/watch?v=n00fvW2b3po

Some experts qualify water injection:

https://youtu.be/aAeU4jvVnBo?t=31

https://youtu.be/mmgGIVR4qAI

References;
(*1) Thermal decomposition of water [edit source | edit] (2) Main article: Thermochemical cycle (3) Thermal decomposition, also called thermolysis, is defined as a chemical reaction whereby a chemical substance breaks up into at least two chemical substances when heated. At elevated temperatures water molecules split into their atomic components hydrogen and oxygen. For example at 2200 °C about three percent of all H2O molecules are dissociated into various combinations of hydrogen and oxygen atoms, mostly H, H2, O, O2, and OH. Other reaction products like H2O2 or HO2 remain minor. At the very high temperature of 3000 °C more than half of the water molecules are decomposed, but at ambient temperatures only one molecule in 100 trillion dissociates by the effect of heat. However, catalysts can accelerate the dissociation of the water molecules at lower temperatures. (4) Thermal water splitting has been investigated for hydrogen production since the 1960s.[13] The high temperatures needed to obtain substantial amounts of hydrogen impose severe requirements on the materials used in any thermal water splitting device. For industrial or commercial application, the material constraints have limited the success of applications for hydrogen production from direct thermal water splitting and with few exceptions most recent developments are in the area of the catalysis and thermochemical cycles*