# XXXXX Article: Solar energy, wind energy, electrolysis, and fuel cells point to big opportunities in turbulent markets

In this article, the writer discussed the market opportunities associated with hydrogen industry. And its expected future commercial impact on the electrolyze plants. The writer mentioned that engineers already figured out how to use, transport and produce the hydrogen long time ago. But because of its high cost. Currently, it is used to refine petroleum and chemical industries. The writer discussed the future economic impact of using the hydrogen in other industries, as in energy storage during times of low demand but high electricity production, this could help producing in commercial-scale when the renewable power source is available, storing extra energy. And when the demand is high the hydrogen can supply the consumers with the electricity this provides a solution for an effective energy storage which could leave its impact on the renewable energy industry. On the other hand, the electrolyze plants can produce the hydrogen during the time of the year when the demand is low, and when it is high the hydrogen can provide electricity by reacting with oxygen using a fuel cell this ensures a cost-effective solution even on high demand.

In the trucks industry, it makes no sense to compare a diesel-powered truck to an electric truck, the diesel-powered truck for sure operate with higher torque and can handle heavier loads. However, an electrical truck with a fuel cell and hydrogen tank the electrical truck then will can be compared to the diesel-powered truck. For this, China has invested $5-billions in a program to develop enhanced version of the hydrogen electric trucks. This and other investments, could have it is impact in providing less expensive electrical trucks that can be compared to the diesel-powered trucks.

After reading this article, I realized how much the renewable energy affects the world economy, and how it is still unstoppable field with big market opportunities. Previously, it was not common to see big oil companies work on research or investing in other energy sources. But after reading the article, it mentioned that our country is on the top of the list of countries investing in the future of the renewable energy. Although our country is the world's largest oil producer.

As an electrical engineer, this article initiates the sense of responsibility to help pushing the field into providing more effective solutions to meet the high demand of the renewable energy especially improving the reliability of the renewable energy sources.

Source : https://spectrum.ieee.org/time-for-utilities-to-learn-to-love-hydrogen