Newpoint Gas, LLC
Innovative Oil & Gas Solutions

Water, Electricity and Hydrogen Production
New Innovations in Natural Gas
Press Release and General Introduction
Oklahoma City, Oklahoma
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Introduction

Newpoint has taken unprecedented action to develop and integrate processes to produce clean water, electricity and a hydrogen energy source from zero-emissions natural gas technologies. Principles of the company are targeting an end to end system demonstration by the close of 2019.

This electric power generator and water production process converts zero-emission natural gas into hydrogen. In this challenging time of global water scarcity and increasing demand for energy, the innovative technology utilizes the worlds abundant supply of responsibly produced and transported natural gas as a low-carbon energy source. Newpoint's process converts methane and other gaseous hydrocarbons into blue hydrogen. The carbon dioxide produced in the process is sequestered and/or used in manufacturing. Newpoint is committed to the implementation of this sustainable technology as an economically and environmentally responsible process.

Process

The first stage concentrates oxygen (O_2) by separating nitrogen (N_2) from atmospheric air through an Air Separation Unit (ASU). The nitrogen can also be sold as a byproduct of this process. Concentrating the oxygen reduces the volume of exhaust gas that must be treated through later stages of the process. The purified oxygen is added to the natural gas stream and injected along with steam into a syngas reformer. The combination of oxygen and natural gas is converted to hydrogen (H_2), carbon dioxide (CO_2), and water vapor. Excess heat produced by the syngas reformer is utilized to generate power while the H_2, CO_2, and water vapor enter a hydrogen purification system.

The hydrogen purification unit separates the H_2 from the CO_2 and water. The CO_2 is sent to a compressor and is ultimately sequestered and/or used in manufacturing. The purified hydrogen is sent to a power generator, combined with air to generate electricity. The H_2 and air exhaust is cooled to approximately 100F (38C), condensing the water created from the combustion.

In addition to water production and electrical generation, Newpoint's system is designed to supply a optional source of blue hydrogen that can be used as fuel for cars, trucks and other transport modes. This optional fuel source adds additional environmental value by eliminating emissions (CO_2, VOCs, etc.) from vehicule transportation further contributing to a low-carbon economy.

“Newpoint’s focus since 2015 has been on the environmental and social impact of oil and gas. We took unprecedented action in developing technologies for Zero Emission Oil & Gas production and Blue Hydrogen that target immediate change. Now our attention is on implementation.” states Newpoint’s founder and CEO Wiley Rhodes

Benefits

- Eliminates carbon monoxide and volatile organic compound (VOC) emissions;
- Produces purified water;
- Provides a zero-emission electrical power source;
- Creates a feasable hydrogen energy source;
- Reduces the cost of CO_2 sequestration or reuse resulting from electrical power generation
- Establishs a feasible hydrogen source to offset the investment required for the infrastructure to distribute hydrogen;
    - As hydrogen is further integrated into a low-carbon economy, expansion of the infrastructure can further utilize this environmentally friendly fuel source;
    - Green hydrogen production at scale will begin when an economical process is developed. The blue hydrogen infrastructure can be utilized in the future by transporting both hydrogen products;

Conclusion

Water, electricity, and hydrogen are produced while contributing to a low-carbon economy. As the scarcity of clean water rises with the demand for earth-friendly energy sources, Newpoint’s precedent-setting innovations will be scaled to meet demand.

Source: Newpoint Gas, LLC in cooperation with The One Step In Foundation

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