Electrifying Oil & Gas

The Industry's Future and Powering the World

Escalante Power Plant – Prewitt New Mexico

The oil and gas industry is enemy #1 for the environmental movement and the events of 2020 will only add momentum to replace fossil fuels.

Fossil fuel or hydrocarbons are not the focus of the problem, it is the emissions. Carbon dioxide (CO_2) is emitted into the atmosphere from burning fossil fuel and thus the driving issue for the movement. In addition to efforts aimed at replacing hydrocarbons, an article in National Geographic further demonized oil and gas by detailing the need to also capture previous emission and "suck carbon from the air".

Credible sources around the world are touting an environmental utopia free of fossil fuels. In his book Reinventing Fire, Amory Lovins states in the first paragraph of the preface; "Imagine fuel without fear. No climate change. No oil spills, no dead coalminers, no dirty air, no devastated lands, no lost wildlife. No energy poverty. No oil-fed wars, tyrannies, or terrorists. No leaking nuclear wastes or spreading nuclear weapons. Nothing to run out. Nothing to cut off. Nothing to worry about. Just energy abundance, benign and affordable, for all, for ever". Also, one of the most prolific businessmen of our time, Elon Musk, while speaking to students at Paris Sorbonne university campus in 2015 about climate change said: "We are going to exit the fossil fuel era. It is inevitable." "We're really playing a crazy game here with the atmosphere and the oceans," Musk said in a separate interview. "We're taking vast amounts of carbon from deep underground and putting this in the atmosphere — this is crazy. We should not do this. It's very dangerous."

The industry and those who support it may discount the validity of the above comments, but the reality is, momentum is against us.

The time for change is here.

Winners and Losers

Change is thwarted by what economists' call "loss aversion." Which is a tendency to avoid a "possible loss" by sticking to the status quo, rather than risk a "possible gain" by opting for change.

Coal may be dead, but by adapting sustainable processes and technologies, oil and gas is in position to prosper.

US production hit record levels in 2019, with natural gas production exceeding 100,000 million cubic feet per day and crude oil exceeding 12,000,000 barrels per day. With these vast hydrocarbon reserves and production capacity, the industry is perfectly positioned to lead the world in the direction of sustainable energy production. By adapting processes that capture the energy contained in hydrocarbons without emitting methane and the carbon rich exhaust into the atmosphere the industry can revolutionize oil and gas as well as electric power generation.
Without change, renewable energy sources and power storage technologies will continue to advance and capture market share. Investments in these technologies will further reduce the value of our vast oil and gas reserves.

Zero Emission Oil and Gas Production

The current focus of the environmental movement isn't against the energy created from fossil fuel, but the carbon emissions created during production and consumption of the hydrocarbons.

Step #1 to owning the future requires the industry adapt process and technologies that eliminate all emissions' and waste at the site of production. By capturing every molecule of hydrocarbons produced at the wellhead, revenue is increased and the first hurdle against oil and gas production is cleared.

Blue Hydrogen Power Generation

Definition of hydrogen by source: In an article The clean hydrogen future has already begun published by IEA sources are defined as followed:

Grey Hydrogen - it's mainly produced industrially from natural gas, which generates significant carbon emissions.

Blue Hydrogen - A cleaner version is "blue" hydrogen, for which the carbon emissions are captured and stored, or reused.

Green Hydrogen - The cleanest one of all is "green" hydrogen, which is generated by renewable energy sources without producing carbon emissions in the first place.

Remember the excitement a few years ago about hydrogen? The lightest element on the periodic table was being touted as THE solution for future energy needs in everything from handheld devices to high rise buildings.

Well things are moving forward again on hydrogen fuel. As detailed in an article by John Parnell, California has been pushing to decarbonize its energy supply, and Mitsubishi Hitachi Power Systems (MHPS), in partnership with Utah-based Magnum Development, is to play a key role in developing a hydrogen-based renewable energy storage complex that could enable continued decarbonization of the West. In the Forbes article, the project, known as Advanced Clean Energy Storage (ACES), will be the first utility-scale renewable hydrogen creation, storage and transmission project.

In the same interview as quoted above Elon Musk called the ongoing use of fossil fuels "an insane experiment" and called for humanity to speed up the adoption of sustainable energy sources to replace them. The key word in that quote is "sustainable".

Sustainable energy is the practice of using energy in a way that "meets the needs of the present without compromising the ability of future generations to meet their own needs."
Renewable energy is energy that is collected from renewable resources, which are naturally replenished on a human timescale, such as sunlight, wind, rain, tides, waves, and geothermal heat.

It is obvious, sustainable energy is different than renewable energy and blue hydrogen is sustainable. Using blue hydrogen as fuel for electric power generation and clean water production, the second hurdle against oil and gas utilization is cleared.

"The best way to predict the future is to create it"
a quote attributed to Abraham Lincoln.

Sustainable Oil & Gas Production

Sustainable hydrocarbon production and utilization become possible when viewed with a "Vision of Solution" to eliminate emissions. After the problem of carbon emissions from hydrocarbons

was fully defined, our company immediately transitioned to understanding why it occurs. A vision of solution is the process of learning "why" and developing "how" the problem is solved. Closing the loop of waste and emissions requires the creation of value at each point waste occurs and minimizing the expense associated with emissions.

-ZERO-

- Production Shrink / Production Loss
- Tank Vapors / Vapor Recovery Requirements
- Methane & Process Emissions
- Flare Gas / Gas Combustors

The Well Site of the Future is built around the concept that zero-emission oil and gas production is not only possible but profitable. Through our research of phase characteristics and the application of these physical properties to hydrocarbon molecules lead to the identification of Flash Gas. With this knowledge our company developed the solution-based technologies and IP of DPNG™ and Compact Fractionation™. These technologies establish a benchmark and prove the feasibility of Zero-Emission / No-Flare oil and gas production.

Clean Water & Sustainable Hydrocarbon Electric Power Generation

Most of us didn't realize that there is another byproduct produced when hydrocarbons are burned in addition to the CO_2 which is pure H_2O or clean water.

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, innovative technology utilizes the worlds abundant supply of responsibly produced and transported hydrocarbons as a low-carbon energy source. Newpoint's approach, XCarbon Power, see 2019 press release, converts methane and other gaseous hydrocarbons into hydrogen. The carbon dioxide produced is sequestered and/or used in manufacturing which is why this hydrogen source is referred to as blue hydrogen. Newpoint is committed to the implementation of this sustainable technology on an economically and environmentally full system basis.

- Eliminates CO_2, CO & VOC emissions
- Produces purified water
- Provides a zero-emission electrical power source
- Creates a feasible hydrogen fuel source
- Reduces the cost of CO_2 sequestration or reuse

Proven Technologies All in Service Today

Nothing described in this paper is a "black box" nor is it untested technology. The equipment we use in our sustainable hydrocarbons work were developed by ourselves or others and have been in service 10 or more years. The reason the concept is novel is based on the method Newpoint used to apply these technologies.

Conclusion

The zero emission IP outlined here, in addition to the Blue Hydrogen development of XCarbon Energy power generation and clean water collection, completes our vision. 2020 is year we kick off our groundbreaking project and build a market for closed loop sustainable hydrocarbons.

For more information please contact us by email at info@newpointgas.com