

# Colorado Hydrogen Network



An initiative of



Colorado Cleantech Industries Association

## Newsletter - February 2021

### Geologic Green Hydrogen!

It looks like we can no longer say that zero-carbon, renewable hydrogen is only made and not found in nature. We have a company right here in Denver that is drilling for green hydrogen – Natural Hydrogen Energy, LLC. To find out more, read the article below in the Networking & Activities Section.

### Upcoming Events & Announcements

#### February Monthly Meeting

Everyone is welcome! The Monthly Meeting will be on-line only.

Tuesday, January 19

3:30 - 5:00 p.m. MDT

[https://us02web.zoom.us/j/84469533312?](https://us02web.zoom.us/j/84469533312?pwd=eTRNaHkyWCtWTGtxcUd5TWxkOTZ0UT09)

[pwd=eTRNaHkyWCtWTGtxcUd5TWxkOTZ0UT09](https://us02web.zoom.us/j/84469533312?pwd=eTRNaHkyWCtWTGtxcUd5TWxkOTZ0UT09)

Passcode: CHN



### Networking & Activities

[Natural Hydrogen Energy, LLC](#) has discovered that it is possible to locate pockets of hydrogen gas underground. Hydrogen can range in depth from just a few hundred feet to several miles. What's more, the processes that creates the hydrogen is ongoing – which means the source of this hydrogen is renewable. Learn more from in the [paper](#) published by the company CEO Viacheslav (“Slava”) Zgonnik who Brian spoke to last week. The wells pose no more environmental impact than geothermal or water wells. The company has offices in Paris and Denver has a working hydrogen well in Nebraska, between Hastings and Lincoln.



Natural Hydrogen Energy was awarded [Efficient Solution](#) status by the [Solar Impulse Foundation](#).

CHN connected with [SmartPipe Technologies](#), which is a company that manufactures continuous lengths of polymer pipe in the field. These pipes can be manufactured with a metallic layer which would act as a barrier for hydrogen. Transferring renewable energy



as hydrogen through pipelines can be an alternative to building new electrical transmission lines which are often blocked for aesthetic reasons

CHN was privileged to receive a lesson from Michael Penev of NREL in the use of the NREL tool “H2FAST” which is an in-depth financial analysis tool for hydrogen fueling stations. The meeting was set up and attended by CHN Consulting Member Kari Burman who is herself retired from NREL. H2FAST can provide useful financial information in the building and operating of hydrogen fuel stations. The tool is an Excel spreadsheet and available for download at: <https://www.nrel.gov/hydrogen/h2fast.html>



Brian DeBruine was invited to give an overview of CHN and participate in a Q&A session with the Rockies Venture Club on January 21<sup>st</sup>. Also participating were [AP Ventures](#), a London-based venture capital firm and [GenCell](#). GenCell produces stationary power systems using alkaline fuel cells that can operate with industrial grade hydrogen or anhydrous liquid ammonia. Both AP Ventures and GenCell have agreed to appear on future episodes of the HydrogenNowCast.



## Projects and Initiatives

**Denver Metro Clean Cities Coalition and CHN** have established a Hydrogen Fleets Working Group. The purpose of the Working Group is to identify and contact business, municipal, state, federal, and transit agencies to inform them of the availability of fuel cell commercial vehicles and of the plans to make hydrogen fueling available in the Denver-Boulder area. The initial goal is to enlist at least 20 trucks in the metro area to off-take hydrogen from the first two fueling stations. The follow-on goal is another 30 trucks for an additional three hydrogen fuel stations



### The HydrogenNowCast



[www.colorado-hydrogen.org](http://www.colorado-hydrogen.org)

### Podcast Update

Podcasts are released every 2 weeks on a Friday. To date, we have released 19 podcasts and the show has achieved over 4,000 downloads worldwide, with listeners on all continents (except Antarctica).

Watch for Episode #20 releasing on February 19th which addresses environmental criticisms sometimes leveled at the uses of hydrogen.

Please help promote the show by subscribing and giving us a rating in one of these podcast apps:

[Apple Podcasts](#) | [Stitcher](#) | [Spotify](#) | [Google Podcasts](#) | [iHeart Radio](#) | [Amazon Music](#)

## News & Events

Nearly 600 hydrogen stations have been deployed in more than 30 countries, as of year-end 2020, according to a new study by market research firm Information Trends and [reported in H2 View](#).

The report: [Global Market for Hydrogen Fueling Stations, 2021](#) highlights the dramatic acceleration in growth the market is witnessing, with 583 stations in 33 countries – and more nations are gearing up to enter



the market.

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Eleven companies have formed [Hydrogen Forward](#), a new coalition focused on advancing hydrogen development in the United States. The founding members—Air Liquide, Anglo American, Bloom Energy, CF Industries, Chart Industries, Cummins Inc., Hyundai, Linde, McDermott, Shell and Toyota—share a belief in the environmental and economic benefits of hydrogen technologies. CHN has requested admission to the coalition. Read the article in Green Car Congress [here](#).



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[China's first hydrogen-powered locomotive hits the tracks](#). The locomotive has a set speed of 80 km/h and can travel with 700 kW for almost 24 hours. These locomotives use hydrogen as a fuel source to produce power and provide a stable power source to the electric motor. China is not the first country to produce hydrogen locomotive. Germany's Alstom launched the Coradia iLint in 2016, the world's first hydrogen-fueled train, with a range of 600 miles on a single tank of fuel.



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A household energy backup system using hydrogen has been developed by Australian firm [Lavo](#). The unit features an electrolyzer, fuel cell and tanks containing metal hydride for increased capacity



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[Navistar Collaborates with General Motors and OneH2 to Launch Hydrogen Truck Ecosystem](#). The collaboration will introduce a complete solution for customer implementation of a zero-emission long-haul system, which will be initially piloted by J.B. Hunt Transport.



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