From:	Methanestrategy, NM, NMENV
To:	Hayden, Maddy, NMENV
Subject:	Fw: [EXT] Request for public comment: Compliments, secondary problems and complimentary alternate solutions
Date:	Tuesday, February 25, 2020 11:59:49 AM
Attachments:	Correlation of Methane Concentrations and Drought Levels in the US.pdf

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From: Timothy M. Leonard <TMLeonard@TapTheSun.com>
Sent: Tuesday, January 14, 2020 3:21 PM
To: Methanestrategy, NM, NMENV
Cc: lwaldrop@illinois.edu
Subject: [EXT] Request for public comment: Compliments, secondary problems and complimentary alternate solutions

Good Day!

First, my compliments to the group at large for the profound effort being demonstrated in New Mexico to address the problem of methane concentrations. The general public needs to know clearly how significant the effects are when the presence of methane has 20 – 30 times the effect of carbon dioxide in retaining heat within the atmosphere.

I would like to make the observation, of which I can find no mention of anywhere on the internet, that the single methane concentration above Four Corners, detected by NASA, coincides with the most drastic drought conditions in the country. I have attached a brief comparison of the two phenomena.

While working on a solar concentration project where the gases methane, carbon dioxide and water were combined and heated to extreme temperatures (1000 C.) which by the process of 'gas reforming' were converted to carbon monoxide and hydrogen, both of which are highly flammable and create 'SynGas' used in the same way as pure methane or natural gas but containing twice the energy per unit volume, I realized that a high concentration of methane, such as that in Four Corners, combined with carbon dioxide and water vapor in the air, then heated with intermittent 'dry lightning' would systematically cause the same reforming process, only a little at a time. The uncontained hydrogen would drift upwards and the carbon monoxide, being highly reactive, would then strip the oxygen atom off of any remaining moisture in the vicinity, thereby further reducing the moisture content of the air and releasing more free hydrogen that has apparently collected further up in the atmosphere in the form of 'hot atomic hydrogen' in what is known as the thermosphere. As the air is systematically reduced in humidity, it then draws moisture from the earth to balance it, like any good desiccant, and produces the drought effect.

Although researchers have been somewhat puzzled by this recently discovered hydrogen layer only 250 kilometers up, I contend this naturally-occurring gas reforming phenomena probably exists and is contributing to the accumulation there.

As a last remark… I mentioned above the solar project that sparked my observation

on the possible atmospheric effects… it has gone unfunded by investors even though it can take the raw 'dirty methane' being flared at oil and gas mining operations, purify it using the solar reforming process and generate large amounts of electricity through turbine generators. The technology does not suit the private or governmental investment/grant templates due to its typical application as a distributed system rather than concentrations on large fields that produce fast exit strategies and high-profile media coverage. It would be a constructive move if the NM EMNRD could locate some funding to pursue this methane mitigation project. It has actually already been tested to a 25% power output level… not that much left to do.

I have copied the principal investigator of the engineering group at the University of Illinois working on the hot atomic hydrogen phenomena on the off-chance this concept can help with their research.

Cheers,
Tim

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