Stuart Lane
Fossil Free Dorset

mail@fossilfreedorset.org.uk

Dear Peter

When I alerted the media about methane venting at Perenco's Kimmeridge well, you took to making a string of comments online trying to rubbish the concerns. You then sent a letter full of erroneous statements about the science behind the concerns and accused me of being desperate, stooping low, not worthy of confidence or credibility. In my view, your words were not honourable and were handled appropriately with a public break down of the false statements in your letter.

Your background, as someone that generates a living from the oil and gas industry was hidden and I question your motives for the concerted effort that you are making to undermine the concerns raised about the venting of gases at Perenco's facility.

Unfortunately, I am going to have to once again lay bare the false statements that you are making to protect those less qualified from getting confused.

You state: "However your emboldened comments reveal much about your own ignorance of the facts surrounding methane and its fate in the atmosphere. The plank of your patronising comments is that methane accumulates in the atmosphere. Hence all discharges should be prevented."

Read my statement again Peter. I state the **Accumulation of Green House Gases**, I did not say the accumulation of Methane; when methane 'decays' it leaves another greenhouse gas – CO2, both greenhouse gasses. That said, methane from the Kimmeridge Well will have produced a rolling stock of methane gas in the atmosphere. Adding to the rolling stock of methane is the gas being vented, deducting from the rolling stock will be the methane that decays. This process takes around 10 years, this much of what you state is true but you have completely ignored the fact that my calculations account for this. You also miss the point that methane decays to another greenhouse gas and that the warming delivered over those ten years doesn't disappear with the decay of the gas, it persists and causes more warming.

Methane has a powerful radiative forcing effect. Measured over a year, this is well over 100 times more powerful than CO2. Measured over 100 years this is about 30 times more powerful than CO2. By using the 100 year evaluation point, I allow for the decay of methane to CO2. Many evaluations are made over 100 years, it is a standard approach that is employed by the IPCC, it does have issues however. We need to deal with climate change over a shorter time frame and it could be argued that it would make sense to look a much shorter time frame for assessments. This however means employing a higher multiplier in the calculations, it doesn't diminish the perceived impact of methane. If anything, my calculations have been very much understating the power of methane to cause climate warming.

Note too that these calculations completely ignore the feedback loops involved in climate warming. When the climate warms it causes such things as methane release from frozen tundra and a loss of reflective cooling effect by the ice caps. These hugely important factors, among others, are ignored by my calculations, again **understating** the impact from methane venting.

You state: "hydroxyl radical is formed from a singlet oxygen, a gaseous inorganic chemical with the formula 0=0 which is in a quantum state where all electrons are spin paired"

The electrons are spin paired? It sounds very impressive, any other (irrelevant) spin you wish to add?

You state: "wealthy landed gentry who so clearly you despise"

I have not made any statement about landed gentry, perhaps this comment was meant to appeal to the Rt Hon Richard Drax? For clarity, I pointed out that the private owners of Perenco have personal wealth nearing £6 billion and that Perenco is a wealthy company. One might think that this has some bearing on what it / they are able to finance when it comes to options for cleaning up their production processes.

Moving on..... here we get to the heart of the problem. The economics of natural capital.

To claim that the Oil and Gas industry does not receive a subsidy is a good sound bite, but it isn't true.

Please read: The IMF study: How Large are Global Energy Subsidies?
https://www.imf.org/external/pubs/ft/wp/2015/wp15105.pdf
When I last reviewed this in 2016, I was in correspondence with the then Secretary of State for DECC – Andrea Leadsom. Going over my notes, the UK's fossil fuel sector was then receiving more than £26 billion a year, or over £400 per person. The IMF stated that it was 1.4% of UK GDP.

How can the Oil and Gas industry claim that it gets no assistance? Well, for a start, when it pumps pollution into the air, it doesn't pay a fine or a tax on that pollution. The atmosphere is treated as a free dumping ground. The costs from climate change do not (yet) get passed back to polluters. This is just one of the 'externalities' that the oil and gas industry manage to avoid financial responsibility.

Oil and Gas companies get massive tax breaks for creating plant and then again when they have to dismantle it.
https://uk.reuters.com/article/uk-britain-budget-northsea/britain-to-offer-north-sea-tax-relief-to-spur-investment-idUKKBN1DM1QB

I understand that there is a pattern of leukaemia on the Isle of Purbeck. Has Perenco spent any of it's profits to look into this? It would be terrible if there are yet more unaccounted externalities to add to this fudged statement of costs and benefits.

Perhaps Peter, you could look into what gases compose the cocktail that has been vented? What are the health implications of exposure to them? I note the nearest residents are about two hundred meters from the source of venting. I am sure all copied here will be interested to have this important aspect clarified.

How do we put a price on sickness, forest fires, soil erosion, destructive storms and floods? Even if we were minded to, who is going to pay? I say let's make a concerted effort to avoid these catastrophic events, not spend our time writing letters justifying why we should destroy the Earth. If it means transitioning away from fossil fuels with ambitious targets, lets gets on with it in earnest. If it means choosing the least worst options in the meantime, fossil fuel plants that run relatively cleanly and closing the very worst offenders, let's do that urgently too. I say, there is NO excuse to pump methane into the atmosphere when there are alternatives, the Earth is, in every sense, priceless.

Yours Sincerely,

Stuart Lane
Fossil Free Dorset

Copying below the previous correspondence for information:

COULD DO BETTER

Peter, in response to your submission, please see comments in red.

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You ought to make a declaration of interest at the very start of this letter. Something along the lines of : "I am an oil and gas consultant".

Kimmeridge Oilfield Methane Discharges
How could The Echo fall for the ridiculous and sensationalist headline put out by Fossil Free Dorset regarding the Kimmeridge Oilfield methane emissions?

The Headline reads: "Purbeck's Kimmeridge oil well is pumping methane into the atmosphere" This is a statement of fact as declared by the Environment Agency and also reported by multiple media outlets including the BBC.

Stuart Lane's claim verges on desperation to a lost cause. Why else would he accumulate the combined discharges from over 43 years of oil production at the site unless he knew that the environmental case was weak?

Climate change is being caused by the ACCUMULATION of Green House Gasses. It is precisely the STOCK of gas in the atmosphere that is causing the problem.
Perenco has made a statement that they have now stopped production at the site and that it will only restart following a review of gas release prevention measures. Perhaps Perenco and the Environment Agency also agree that it is

unacceptable to continue to add to the pollution that has been emitted by this one small well..... maybe you could ask them given the close links?

When environmentalists stoop this low they lose credibility and the confidence of the public bringing their cause into disrepute.

The oil and Gas industry fund the pseudo-science of climate change denial whilst being the largest source of greenhouse gases. It is a marketing model perfected by the tobacco industry and often involves people with letters in front of their name being paid to discredit research. There is a credibility issue and one that stoops very low indeed.

Let us put the situation into context. 1 cow produces 100 kg of methane per year.

Emissions from cows are ALSO of concern and yes also cause a significant green-house effect. There is research into how to reduce emissions from cows and of course a movement that encourages the reduction of dependence of cows within our food system. But that is not the issue being addressed in the article, it is the wilful and needless venting of methane from this well that appears to have only been allowed due to a loophole in the regulatory system, an old-style permit that has lower standards.

If you really wish to assess the damage in terms of cows however, you are going to have start again with your calculations.....

You appear to assume that all cows are the same. The figure you quote perhaps relates to a mature dairy cow? Of course, not all cows in the country are fully grown, in fact 1.5m of them are calves. Beef cattle, which account for more than half of all UK cows, emit less than half the methane when compared to dairy cows. The methane that they produce varies according to breed, diet etc. If you wish to bring in the figures of the UK's stock of cattle for comparison, it better if you create a hybrid 'average' cow's emissions, to avoid

any exaggeration. This would be less than half of a dairy cow's emissions. The whole premise is however fundamentally flawed.

The production at Kimmeridge oilfield, according to Perenco's EPR Permit Application of April 2017, suggests the well is capable of producing about 70 barrels of oil, or 10 tonnes, daily. Mr Lane then takes all associated gas and assumes it to be methane, (another exaggeration). The vented gas discharged from Kimmeridge, when producing, is just 0.89 tonnes (890 kilos) of gas per day.

Wrong. Calculations are based on the Environment Agency's METHANE emissions data (not total associated gas emissions). Perenco states that 76% of associated gas is methane. The Oil and Gas Association data suggest that the total associated gases are higher than ones used by the EA. In fact, they are MUCH higher and there are unanswered questions about this discrepancy. The lower EA figures have been employed to be prudent. Also, where there was insufficient data, emissions were assumed to be zero. Production data was not available beyond 2003, hence the past 15 years of production has been treated as if it created zero emissions, an under-estimate.

Let's play along with Mr Lane and assume all the gas is methane. 890 kilos represents the annual gas output of just 9 cows! Put another way it represents the daily gas discharges from 3300 cows' bottoms. With the average cattle population of counties in Britain at over 200,000 animals it puts the Kimmeridge discharges into a rather different class. Dorset's cattle herd produce the equivalent amount of methane in 25 minutes! The current price of oil at $78 (£59) a barrel gives field income of £4256/day whilst the vented gas is only worth £300 at current wholesale prices. What would you do?

See above for comments re your incorrect basis and assumptions regarding cows. Excellent observation regarding market factors. It is probably cheaper for Perenco to discharge the methane into the air than to collect it. Well done; bonus marks for making this observation! Perenco faces no cost for this 'externality' it produces, it is born by those impacted by climate change. Pollution is profitable, and the regulations have given preference to profit over pollution minimisation. Perhaps you could expand on the commercial savings made by this needless pollution? It might be interesting to show the savings made in

terms of a percentage of their profits or contrast against the wealth of the private owners? You will find them listed in the Times Rich list.... with something like £6 billion pounds of personal wealth.

Looked at another way, far from running a small town on the gas being vented a small village might be more likely. The 890 kg of methane corresponds almost exactly to the annual gas consumption for one average home in the UK. So you might run 365 homes on the vented gas for an entire year. That would heat a village the size of Milton Abbas or Milborne St Andrew, not a town like Poole as suggested by Mr Lane. Add in the infrastructure costs for the lines to deliver this gas and it becomes completely uneconomic.

Again, fundamental errors here. The issue is not what the gas could have heated if combusted. The issue is that UNCOMBUSTED METHANE is a powerful greenhouse gas. It is the fact that methane released directly into the atmosphere (worry if your central heating does this!) has a potent radiative forcing effect. Therefore, the impact has added up to be comparable with the residents of small city for a year.

Yours Sincerely,

Peter A Read