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In summary, This author, Zero Technology Solar Ltd. objects to any increase at all above 2021 expenditure (perhaps as requested in Table 1 of Draft V1.1) and objects to use of either the customer vulnerability excuse or the carbon monoxide excuse to move any costs of works on obsolete fossil gas appliances and pipelines onto the bills of other GDN's and other customers.

This outsider opinion from Zero Technology Solar Ltd. of Oxfordshire is in response to the call for opinion on document [https://www.ofgem.gov.uk/publications/consultation-modification-vulnerability-and-carbon-monoxide-allowance-vcma-governance-document?utm\\_medium=email&utm\\_source=dotMailer&utm\\_campaign=Daily-Alert\\_20-07-2023&utm\\_content=Consultation+on+modification+to+the+Vulnerability+and+Carbon+Monoxide+Allowance+%28VCMA%29+Governance+Document&dm\\_i=1QCB,8CSZY,B0375A,YFD69,1](https://www.ofgem.gov.uk/publications/consultation-modification-vulnerability-and-carbon-monoxide-allowance-vcma-governance-document?utm_medium=email&utm_source=dotMailer&utm_campaign=Daily-Alert_20-07-2023&utm_content=Consultation+on+modification+to+the+Vulnerability+and+Carbon+Monoxide+Allowance+%28VCMA%29+Governance+Document&dm_i=1QCB,8CSZY,B0375A,YFD69,1) (V1.1 20 July 2023) ('The Document')

As this opinion note concerns the policy and expenses mentioned in that document more than the wording of The Document itself, I request that this matter be escalated to a relevant government department of high enough authority to consider abrupt discontinuation of all imported fossil gas in the United Kingdom, as well as to disentangle the attempts of The Document to conflate safety-critical necessities which need to be funded, vs. routine ongoing pipeline refurbishment and general spending on gas household repairs, which would use up budget on gas heating, when that could be better used for other renewable heating and cooking technologies instead.

It has been habitual of the gas trades since discontinuation of town gas in the 1970's and its replacement with North Sea Gas, to conflate routine or precautionary maintenance, with eliminating the lethality of the carbon monoxide in 1930's town gas. Now that we are seeing the need for absolutely nil CO<sub>2</sub> ('nil net Carbon'; nil Carbon Dioxide) home heating, we should be vigilant to dismiss attempts to disguise routine precautionary maintenance and refurbishment of the fossil gas supply and appliances, when we should instead be discontinuing and replacing all forms of combustion heating. To shift 171 million pounds of routine precautionary maintenance and refurbishment of fossil gas burning appliances and distribution networks onto an unavoidable VCMA allowance, immediately makes it an unquestionable Requirement for GDN's to spend money on whatever tasks they had re-branded as safety necessities, and then to move their share of the cost of those onto everyone else's consumer gas bills via a UIOLI allowance budgeted in RIIO-GD2.

In Table 1 of VCMA Collaborative Projects, I remark that the costs for 2023-4 and onwards all appear to be 409% of the budget per year last year and the year before. If Table 1 indeed shows yearly spending planned to more than quadruple by comparison to last year and 2021, then we should question what is going on when each GDN is tasked with 'how to spend an allowance for collaborative VCMA' whose costs are going to be shared across other gas distribution networks.

2021/22	2022/23	2023/24	2024/25	2025/26
3.01	3.01	12.29	12.29	12.29

Table 1 Annual Totals of VCMA costs (unofficial) from Table 1 of page 8 of The Document.

For these reasons, it is the opinion of Zero Technology Solar Limited that all and every mention in The Document about mandatory spending to be heaped into RIIO-GD2, and in acronyms referred to from The Document, of 'Carbon Monoxide' be discontinued, because all phrases mentioning 'Carbon Monoxide' attach fear to the anticipated consequence of neglecting the continued routine maintenance and refurbishment, when in fact the consequences of continuing to burn fossil fuels are certain to be lethal for a much greater number of victims in future. Where a budget such as 171 Million has been proposed for such works on fossil gas networks, Zero Technology Solar proposes that at least three quarters of that budget be used instead for renewables heating and district heat installations, so that parts of those gas distribution networks may be disused and shut down in planned and preannounced discontinuations. We have about two decades in which to discontinue piped fossil gas to all areas which could be heated by any other means. To do so gradually at about two million homes per year, should cost less than to do it all at once in a hurry. Therefore money spent on routine maintenance and refurbishment of gas equipment, is mostly money wasted. We should be upgrading at least two million homes per year to wholly renewable heating, with the money saved from not having so many gas pipelines and gas meters contributing to the cost of doing so.

That is most especially so for new-build housing. Consider a new-build housing estate for one thousand homes. Fit every one with sensible insulation and new district-heat, instead of a fossil gas pipe. If part of a nationally standard rollout, that should not cost more than gas piping in every street, gas piping in every house, a gas meter and associated billing and customer services for every house, new pumps and distribution equipment upstream of the new housing estate, refurbishment and maintenance of the gas distribution network upstream of the new estate. If the plan were to build with district and renewable heating and to enlarge that to the whole town, then instead of heaping the town's gas distribution equipment refurbishment costs onto essential gas bills, the whole town is given a discontinuation date and retires every fossil gas appliance in the district.

I also note similar concern with the phrase 'supporting consumers in Vulnerable Situations' That phrase looks to me like a way to encourage elderly or vulnerable customers to continue to burn gas and have home gas maintenance and refurbishment at prices much above what is affordable to them, in a category of allowance which can be said to look almost charitable, and shared on everyone else's daily standing charge. If there really is a safety issue and a vulnerability issue then would it be safer to discontinue gas supply to that address immediately, installing insulation and other heating not combustion, before next winter?

It is remarked by Zero Technology Solar Limited ('ZTSL') that all Social Return on Investment (SROI) and Net Present Value (NPV) calculations ought to be truncated at The planned discontinuation date for that portion of the fossil gas network. If it is not discontinued tomorrow then at what date in the adjustment to genuine nil CO<sub>2</sub> does that portion of the fossil gas network become discontinued? I am not an accountant, so request that a senior accountant could usefully write an application note on how to properly recalculate SROI and NPV for obsolete fossil combustion and distribution hardware given either a planned discontinuation date if decided, or presumption of a linear taper of decreasing consumption at a pace which must be compatible with a survivable future climate. It is remarked by ZTSL that the survivably necessary taper might be much faster than ten years of decreasing consumption by 10% of 2020 consumption. Also for that accountant, there could be some existing fossil gas pipelines, typically from existing industrial zones to existing oil and gas rigs, which could usefully be used in reverse for deep geological storage of CO<sub>2</sub> from the continued requirements of industries such as cement production, in which carbon dioxide is an inevitable byproduct. How would one allow for expected hardware reuse in the post-fossil-fuel era in properly accounted figures, and how should one properly include major costs expected such as reversal of the pumps at the gas rig? It would be better to make cement with carbon capture and storage (CCS) than to import cement as the present CO<sub>2</sub> accounting rules, devised in the European Union era, seem to favour.

In the context of Climate Emergency, it is counterproductive to declare as 'essential' the incumbent heating and cooking equipment and its supply of fossil gas. Where a customer is classed as vulnerable due to a permanent or temporary health condition which makes them more vulnerable to health risks associated with cold homes, and funding is Not Available for essential gas appliance service, the choices should be whether to insulate and retrofit nil CO<sub>2</sub> heating and cooking, or to bring in a lodger, or to move house to a more suitable site. Any of those improve the temperature in the home, without wasting money on obsolete fossil gas heating.

There are going to be a few regions close to offshore renewables and heavy industrial zones where it is possible that sufficient renewables and hydrogen production might use existing gas pipes to distribute pure hydrogen gas feedstock to heavy industry. That being an unavoidably energy-expensive chemical to make, it would be, according to ZTSL, a bad decision to burn any of it at all for home heating when it should instead be reserved for speciality chemicals, petrochemical reformers and hydrogenated vegetable oils, ammonia and fertilizer, reduction and smelting of metals, and possibly Orkney-process synthetic hydrocarbons.

In summary, This author, Zero Technology Solar Ltd. objects to any increase at all above 2021 expenditure (perhaps as requested in Table 1) and objects to use in The Document of either the customer vulnerability excuse or the carbon monoxide excuse to move the cost of works on obsolete fossil gas appliances and pipelines onto the bills of other GDN's and other customers.