REA response to Environment Agency: Standard Rules Consultation No 27 - Capture, treatment, and storage of biogas from lagoons and tanks

The Association for Renewable Energy & Clean Technology (REA) is pleased to submit this response to the above consultation. The REA represents renewable electricity, heat and transport, as well as Electric Vehicle charging infrastructure, Energy Storage and Circular Economy companies. Members encompass a wide variety of organisations, including generators, project developers, fuel and power suppliers, investors, equipment producers and service providers. Members range in size from major multinationals to sole traders. There are around 550 corporate members of the REA, making it the largest renewable energy and clean technology trade association in the UK.

Questions on the draft standard rules permit

1) Do you agree that the activity limits are appropriate?

No. REA members are generally already operating anaerobic digestion plants or similar that will have been specifically constructed for purpose and are generally of a scale that are larger than covered in this consultation. However, the practice of generating and capturing biogas to provide a valuable gas that can be used in many end uses is well known. Therefore, the practice and principles are broadly similar as covered in most of the rules within this proposed standard rules. The ambitions of the government biomethane production is documented in various policies including, more recently the biomass strategy and this would help to reach those ambitions. However, it is important that the benefit for this permit is achieved which is to reduce fugitive emission of methane into the atmosphere and to (where possible) capture biogas to use as a replacement for fossil fuels.

As it stands in the rules covered in this permit proposal, there is a limit set on the size of lagoons of 5000m3. If designed to be constructed with a cover, calculations could be made that accounted for a significant drop in rainwater and therefore a smaller capacity of lagoon might be needed. However, we have been made aware that for a herd size of ~150 cattle, the lagoon volume has traditionally exceeded this volume. There is also often a requirement to have a freeboard allowance. Therefore, this rule may significantly limit the scope of eligible farms to those with smaller lagoons, thereby limiting the impact. As most would already have been constructed, there would be little value in reconstructing the lagoons or stores to fit the scope and therefore most would be unlikely to be eligible. This would limit it to new builds or only the much smaller herds which are likely to be uneconomically viable for installing the upgrade equipment. We are unsure why this volume has been set and unaware if a larger lagoon would mean a bespoke permit would be required. If this is the case and due to cost for permits this would again likely put the

majority of farms off upgrading. It would be helpful to provide a rationale for this limit and whether this was based on some specific data capture. We would support considerably increasing the size of lagoon covered by the standard rule permit.

Also, it has been noted that there are solutions which will not be eligible and therefore not encouraged by the permit. Therse would also suit the needs of smaller farmers and may also be in some cases more beneficially so it would be important to understand why these have not been included or it seems considered. These would include in addition to covered lagoon, modular, containerised, and older continuous stirred tank reactor (CSTR) systems. All of which can be used to supply the use of various energy needs for a farm (power, heat and fuel) so could help decarbonise the agricultural sector.

It is also therefore not totally understood why this has been focussed on the production of biomethane as there may be opportunities to use biogas, such as for on-site use, rather than restricting to biomethane upgrade, which will have additional costs that might not lend itself to small or even medium sized farms where large scale farms may not be eligible due to lagoon sizes. There is already an issue with capacity and CV rating for grid connections and the flow may be too low to be viable for this use. Therefore is also the concern from some members that may be affected by progression for smaller/micro scale AD plants, or modular system deployment where they have already flet has been stagnated by the loss of FIT, and the eligibility constraints of the current GGSS mechanism.

The inclusion of storage facilities is useful to include as is the inclusion of the ability to provide refuelling on site. This will be very important for the reasons provided above for grid connections which are further exacerbated by limitations for connection points due to geographical location and resultant connection costs which although could encourage a cooperative injection process to make it justifiable, this itself may be outside the scope of the permit. It may therefore be more viable for use locally and allowing the use of transport trucks for shipment within this locality.

It is also noted that there is a restriction on the use of a spark engine. Given the nature of farms there is unlikely to be a suitable electricity system in place which might therefore require the use of a generator. We believe this stipulation in the rules would further restrict the ability foremost to upgrade or would place unnecessary costs on the farmer to comply and also its unclear if, given the likely use of a generator on site whether this is a concern about igniting the gas, and whether this falls into a DSEAR regulations issue or if there should be some zoning stipulation for this permit accordingly to make it clear what the purpose of this is.

2) Do you agree with the proposed operating techniques to control explosive atmospheres?

Yes. The use of control measures such as DSEAR and COMAH are industry practice and as such consultants assisting with applications should be able to provide sufficient support to set up management plans according to the stipulation set by each. It's likely that these systems will be below the COMAH regulations limits. The REA have many members in the Biogas sector and related industries such as Landfill gas operators where specifically DSEAR is well practiced, therefore there is a need to keep consistency where explosive gases are involved. So, this would be considered to be sensible provided costs are not

proved to be inhibitory to deployment of small-scale systems. However, there is a concern about the limiting of the use of spark engines.

3) Do you agree with the proposed operating techniques to control air pollution?

No. The concern regards the type and frequency of monitoring that would be required, specifically odour monitoring. There is always value on capturing data, and this is important to provide some assurance of compliance and management. However, the type of testing and frequency, such as odour monitoring can be ambiguous and unnecessary. It may also be considered out of date. It is likely that the main odours from the plant are likely to be in the process slurry halls feeding the lagoon. Farms by their nature are traditionally odorous. Although its true the concentration of odour is more likely where it has moved from an open lagoon constantly diffusing, to a collected gas. And as with leachate tanks, odours can be released when emptying, this is brief and would depend on distance to receptors. There is also a concern that additional monitoring is again likely to be a cost that would make the upgrade unviable. The value of monitoring should therefore be reviewed to make sure this is of benefit and meets the needs of the permit without undue obstacles to the farming community and only when there are odour concerns due to the proximity of sensitive receptors. It would also be dependent on the use of gas.

Also there needs to be some consideration of how the system is generated. Unlike a commercially operating AD plant, there is not a constant feedstock, and this is often waste generated during part of the year which is then stored for a period of time for use when suitable later in the year. Therefore, gas pressures are likely to be low so the frequency of monitoring could be reduced according to the relevant risk. The emissions for this source of gas is therefore considered limited.

Although there is appreciation that standard rules permit is meant to be designed to reduce the complexities and make a process of administering more straight forward by categorising however there is limited ability to utilise this captured gas more effectively onsite that is not totally understood by the consultation documents.

4) Do you agree with the proposed operating techniques for water pollution?

Yes.

5) Please provide any other comments you wish to make about the draft rules.

Some of the lagoons that would have the potential for gas capture may have been constructed a number of years ago. Particularly for earth bank lagoons there will often be a lack of paperwork to demonstrate compliance. It is likely that during construction through CAR and SSAFO regs there will have been conditions set on proximity to watercourse and receptors. Therefore, there is unlikely to be any additional nuisance caused by covering an existing lagoon, and therefore will comply. So, although there should always be consideration made to the protections of watercourses and particularly the potential risk of contamination, the comments have been made based on the belief that existing lagoons should already have been constructed with the protections considered so the covering of this existing structure. The only concern will be in providing

the specific evidence of construction, particularly for those lagoons built some years ago and therefore this may further limit the take-up.
The risk assessment is well covered for all aspects of the permit proposal. This is due to being based on DSEAR and COMAH regulations which set a management plan according to the risk and also the provisions of limits. These are well documented and practiced.
In principle, provision of a standard rule permit is welcomed as it provides a solution to prevent a potential release of emissions which could be harnessed for a fuel and help with decarbonisation. However, there are other solutions which may provide a more circular approach to decarbonising farms or indeed food and beverage processing sites to offer effective onsite solutions that are being missed by this permit proposal. Some of the reports on this have been provided by a member which highlights the work and who is concerned that modular AD among other mentioned earlier, also need a regulatory position, with a formalised exemption.
WASE WASE – Unlocking the power of wastewater
Farm of the Future Report - www.rase.org.uk/reports/.

Questions on Generic Risk Assessment

6) **Do you agree that the generic risk assessment adequately covers the risks associated with the capture, treatment and storage of biogas from lagoons and tanks?**

Yes.

Questions on the Business Impact

7) **What staff roles are responsible for preparing permit applications and supporting Environment Agency compliance assessment activity for permitted sites? (For example, technical specialist, manager, senior official.)**

For the reasons previously stated, it is likely that as it stands the permit would only be eligible for farms with smaller lagoons and stores and therefore, they are unlikely to have significant members of staff or technical capability to complete the applications or ability to employ a permanent member of staff, unless the gain from gas generation was significant to add value. Therefore, it is expected that most applying would have to employ a contractor to complete the application There is also a concern that additional monitoring is again likely to be a cost that would make the upgrade unviable. The value of monitoring should therefore be reviewed to make sure this is of benefit and meets the needs of the permit without undue obstacles to the farming community. As it stands there may need to be employment of a contractor to build and possibly operate. It has been suggested that there may be some EA provision or work with the AD sector to provide.

8) **Will you incur any third-party monetary costs to prepare a permit application? (For example, hire consultants, access external advice.)**

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significant members of staff or technical capability to complete the applications or ability to employ a permanent member of staff, unless the gain from gas generation was significant to add value. Therefore, it is expected that most applying would have to employ a contractor to complete the application. It has been suggested that there may be some EA provision or work with the AD sector to provide sufficient guidance to farmers.

9) **How many hours do you estimate it will take you to prepare a standard permit application?**

REA are unable to provide an answer to this question.

10) **How many hours do you estimate it will take you to provide support for an Environment Agency compliance assessment visit? (This may involve preparing for the visit, accompanying an Environment Agency Officer and any follow-up actions.)**

REA are unable to provide an answer to this question.