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# Future Support for Low Carbon Heat

## Response to Consultation on behalf of Severn Trent Water


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**Position Statement**

At Severn Trent Water we are committed to the decarbonisation of our operation, recently unveiling our Triple Carbon Pledge which is focussed on:

- Sourcing 100% of our energy consumption from Renewable sources,
- Electrification of our vehicle fleet where technology allows, and
- Net zero carbon

All of these targets will be delivered by 2030. We are also committing to Science based targets that will focus on the physical reduction of carbon equivalent emissions without the use of offsets.

We are one of the biggest Water and Sewerage Companies in the UK, serving 8 million customers across the Midlands and have been leaders in the Renewable energy for sector for many years, generating 234 GWh of renewable power last Financial Year.

This consultation presents a fantastic opportunity that is aligned with both our environmental ambitions and our desire to deliver the best possible service for our customers.

We are wholly supportive of the Water UK submission, and this response is intended to highlight the areas of the consultation which are most specific or relevant to our business uniquely. We believe that the Wastewater sector has huge potential to advance the generation of renewable Biomethane and subsequent decarbonisation of the UK Gas Grids / Heating network.

The Wastewater sector is one of the few areas of the wider waste industry where reduction or avoidance of waste is unlikely to ever be achieved. If anything our potential feedstock for Anaerobic Digestion will grow marginally in line with population growth. We are focussed on the long term, sustainable future for the UK and intend to continue delivering decarbonisation opportunities wherever possible.

Conventionally, we have utilised CHP engines to heat and power our sites supported financially by the Renewable Obligation. These sites range in size from 300-9000 kW of instantaneous electrical power output and are diverse in their methods of operation. Moving forwards, Biomethane can offer a more efficient approach to energy export and utilisation. We have already contracted to source 100% of our electrical power from zero carbon sources and so we can see a new, lower carbon approach to biogas utilisation.

The replacement of CHP with a combination of grid fed, zero carbon electricity and Biomethane export is a significantly more efficient and sustainable model. It can produce biomethane for decarbonisation of the gas grids and potentially for use in our HGV tanker fleet as compressed Natural Gas.

Best Regards

Simon Farris

**Response to Questions**

Overall, Severn Trent Water is hugely supportive of the ongoing support for Biomethane and welcome the contents of the consultation. We would ask that this be read in conjunction with the Water UK response which we also fully support.

1. **Do you agree that the tiering structure as outlined above is appropriate and would deliver the best value for money? Yes/No. Please provide evidence to support your response.**

The concept of tiering is one we support, however we would like the opportunity to convert a greater number of our small to medium sludge treatment sites. In order to do this, we would need to see a smaller volume tier with higher income potential.

We have 26 Sludge Treatment Facilities processing around 230,000 tonnes dry matter every year. 150,000 tonnes of this material will be converted to Biomethane by the end of 2022. This will create 250 GWh of Renewable Biomethane for Injection into the Grid under the RHI.

This leaves around 1/3 of our total feedstock that we will continue to process to electricity through CHP. This is split across 18 sites. Each of these sites has a much smaller throughput that is determined by the geography of the local area and subsequently produce smaller volumes of biogas. We will have two choices to convert these sites to Biomethane;

1. Increasing tanker movements to get to centralised 'hub' sites that can reach a critical mass that meets the economics of a 60GWh pa scheme or
2. We develop smaller schemes that treat locally and avoid transportation of sludge.

In order to consider option 2, we would need a lower tier that carries a higher rate for biomethane. We do not seek additional funding, but as set out in the Water UK response, the table below would support our more rural sites onto a biomethane scheme.

| **Proposed New Biomethane Injection** | **Consultation Tariff Amount (p/kWh)** | **Proposed New Biomethane Injection** | **Amended Tariff Amount (p/kWh)** |
|---|---|---|---|
| Tier 1 First 60,000 MWh of eligible biomethane | 4.9-5.5 p/kWh | **Tier 1A** First 20,000 MWh | 8.5 p/kWh * |
| | | **Tier 1B** Next 40,000 MWh | 4 p/kWh * |
| Tier 2 Next 40,000 MWh of eligible biomethane | 3.25-3.75 p/kWh | **Tier 2** Next 40,000 MWh of eligible biomethane | Unchanged |
| Tier 3 Remaining eligible biomethane | 1.5-2.75 p/kWh | **Tier 3** Remaining eligible biomethane | Unchanged |
| ***Note**: These amended tariffs balance with the total funding originally proposed for Tier 1. | | | |

These tariffs would maximise the available green gas potential from sewage without the need to consolidate at large sites. At the same time, it does not commit the scheme to any additional spending in the lower tier rates. Severn Trent Water would be incredibly supportive of this approach to stimulate growth in our more rural areas.

2. **What are your views on the impact of a 15-year tariff period to support biomethane? Please provide evidence to support your response.**

As stated previously, we are a regulated water authority and we would be seeking certainty and longevity of our investments. We would expect to operate over a minimum of 15 year asset life to get best value for our customers and deliver against long term decarbonisation ambitions.

3. **What are your views on the advantages and disadvantages of a shorter 10- or 12-year tariff period and whether they would help maximise value for money? Please provide evidence to support your response.**

As per question 2. We are keen to develop certainty for our investments in the long term. We are a business that wants to play a part in the development of green gas into the future and the certainty of 15 year investments would support this. 10 and 12 year support mechanisms would leave long term uncertainty over the viability of new assets (potentially leaving them unsupported but with working asset life) and would reduce the likelihood of us investing

4. **Do you have any views on the appropriate tariff level, within these ranges? Please provide evidence to support your response.**

As per the Water UK submission and the table in question 1. To encourage smaller sites in the sewage network to convert to a biomethane / heat driven model, tariffs at lower levels would need to be higher.

5. **Do you have suggestions of other mechanisms that could be introduced to ensure tariffs deliver the best possible value for money – for example, additional evidence on costs and revenues that applicants to the Green Gas Support Scheme could be required to provide?**

There is a risk that plants could be over sized and take valuable capacity from the system to fit with the 60 GWh lower tier. As part of their ongoing obligation, plants should not be allowed to hold redundant capacity that prevents others from entering the scheme. This would allow for a better distribution of high utilisation plants.

6. **From experience of degression, how do you think elements such as the frequency and size of degression, and spend triggers, should change in order to ensure value for money, whilst meeting the need for investment certainty? Please provide evidence to support your response.**

AD plants require time and investment to get to a stage of development that would warrant an application for a tariff guarantee. From our experience, to get planning permission, funding approvals and grid connections can cost several hundreds of thousands of pounds and take 6-12 months to achieve certainty. In this time alone, 3 degressions could have taken place under the RHI mechanism, and these early stages were always high risk. Moving to 6 month degression windows would allow more confidence in what the likely incentive rate would be at the point of contract award.

7. **Do you have further suggestions, beyond those mentioned in this consultation, which would help the Green Gas Support Scheme to deliver the best possible value for money? Please provide evidence to support your response.**

We will determine our choice of energy production based on a combination of carbon and financial benefits. Anything which makes this more attractive as an investment opportunity would encourage us to switch to Biomethane.

8. **Do you agree with the proposals for tariff guarantees for biomethane? Yes/No. How could this be improved? Please provide evidence to support your response.**

Yes. Anything that provides certainty for us investing is positive. Our main request would be for a faster turn around in the processing of TG applications to make sure we can programme effectively and give more ambitious commissioning dates.

9. **What are your views on increasing the minimum percentage of waste feedstocks above 50%, now or in the future? What could be a suitable new threshold? Please provide evidence to support your response.**

No comment – our feedstock is 100% waste.

10. **In light of recent amendments to sustainability criteria in the RED II, do you have any views on whether the UK should look to take into account similar changes for the Green Gas Support Scheme?**

No comment – our feedstock is 100% waste.

11. **Do you have any views on how the feedstock reporting process for biomethane should be amended compared to the existing RHI requirements?**

Greater flexibility on waste assessment to allow more certainty on whether a waste is accepted or not. We would be keen to explore co-digestion, but the feedstock analysis process could be a barrier to bringing these wastes in.

12. **What measures and technologies exist for reducing ammonia emissions from digestate and what are the barriers to their widespread deployment?**

Unlike food wastes, sewage sludge treatment facilities dewater to a solid ‘cake’ before spreading to land. The liquids recovered from this process are treated through a wide variety of Ammonia treatments across the wastewater industry.

We are currently developing technology to recover the ammonia from these liquors and use it to create organic fertiliser that could be more effectively pelletized and spread to land. If successful, the process will remove carbon dioxide from exhaust gases or Biomethane plants and combine it with the ammonia in the liquors in a way that prevents these gases from escaping to air and enriches the nutrients in the soil.

13. **What are the reasons for the lack of commercial demand for digestate and how can the market for digestate be strengthened?**

Sewage sludge is limited to a certain number of land types and crops. By allowing investment in the sludge treatment process, companies can achieve a higher 'enhanced' biosolids status that will increase the number of markets and demand for the material. A solid income from energy production, further supports the shift to Advanced AD (AAD) that will allow us to produce enhanced cake and potentially increase the number of customers.

All our sludge is disposed of securely under close inspection of the Biosolids assurance scheme.

14. **Do you agree with the proposal not to include an additional capacity mechanism within the Green Gas Support Scheme? Yes/No. Please provide evidence to support your response**

No, by not allowing expansion of existing plants it will encourage companies to overstate capacity in the early part of the scheme. This will take capacity away from smaller producers and potentially leave it in the system redundant and unlikely to be used for the duration of the scheme. By having the tiering system, any future development of a plant would likely attract a lower rate on the tiers and as such would not be unfairly rewarded.

15. **Do you have any views on how a change of scheme participant mechanism may differ in the Green Gas Support Scheme to the RHI? Yes/No. Please provide evidence to support your response.**

The RHI makes it difficult to transfer ownership of the asset once it is registered. We would like to see the ability to sell / transfer the registration on the new incentive to allow for the sale or transfer of assets between companies. We would expect that any transfer of registration be appropriately made and that proof of transfer of assets, connection agreements and permits be publicly declared to give full transparency, but we would welcome any means to transfer the incentive registration between parties.

16. **Do you agree with the proposal to not allow any interaction between the RHI and the Green Gas Support Scheme? Yes/No. Please provide evidence to support your response.**

We would request that more clarity is given. Where a plant has an existing RHI accreditation for heating, it should not preclude it from changing to Biomethane. Where it is already injecting biomethane, it should be able to increase capacity if the opportunity arose to maximise the production of biomethane. We would welcome further discussion on this point.

17. **Do you agree with our proposal to allow biomethane producers to decide how much biomethane they wish to claim Green Gas Support Scheme payments for within a given quarter? Yes/No. Please provide evidence to support your response or provide an alternative proposal for scheme interaction**

We would support the proposed approach. It is important that sites can provide both heating and transport decarbonisation without restriction.

18. **What are the main barriers to the deployment of biomethane AD plants and what potential solutions could help to overcome these?**

As outlined in earlier questions, the need to commit to scale is a barrier for certain sludge treatment facilities and support for smaller sites would be welcomed.

One issue is availability of grid connections, and so the flexibility to develop 'virtual' pipelines where upgraded biomethane could be moved to a suitable injection point or point of use would increase opportunity for development.

19. **Do you have views on how the Green Gas Support Scheme could be improved, beyond the ways described in this consultation? Please provide evidence to support your response.**

Not beyond the suggestions made in this and the Water UK response.

20. **Do you have any views on the most appropriate market-based mechanism for green gas support in the longer term, and how this might operate? Please provide evidence to support your response.**

Longer term, any mechanism that supports a greater balance between electricity and heat pricing would be helpful to drive biomethane growth. Currently, a cubic metre of biogas can be made into 27 p of electrical benefits (self-supply) but only 9p of Gas benefits. Any mechanism that can level up the disparity in the 2 commodity values would reduce the need for incentives a make the sustainable investment in the long term.

21. **Do you have any views on industry readiness for a market-based mechanism to support green gas in the longer term? Please provide evidence to support your response.**

We are regulated in 5 year cycles and therefore would welcome any discussion with BEIS in the next 12 months before we begin preparations for our next investment planning cycle for 2024.

We have no comment to make on the later questions in this consultation at this time.