08/06/2022

REA Response:

Green Gas Support Scheme 2022 Annual Tariff Review: call for evidence

The Association for Renewable Energy & Clean Technologies (REA) is pleased to submit this response to the above call for evidence. The REA represents industry stakeholders from across the whole heat sector and includes dedicated member forums focused on green gas (including biomethane and hydrogen), biomass heat, biomass power, renewable transport fuels and energy from waste (including advanced conversion technologies). Our members include generators, project developers, heat suppliers, investors, equipment producers and service providers. Members range in size from major multinationals to sole traders. There are over 500 corporate members of the REA, making it the largest renewable energy trade association in the UK.

Key recommendation from our response

For all the reasons set out below, we strongly discourage BEIS from using the annual tariff review mechanism to make significant changes to the GGSS tariffs (e.g. decrease) as doing so could unsettle developers and undermine future investments in this sector at a time we really need to boost our domestic biomethane supplies. Unless BEIS are confident that the long-term viability of these projects has drastically changed in light of macroeconomic and/or supply chains changes, and that these changes are expected to last in the long term, we do not believe there is a good justification for decreasing the tariffs at this time.

1. **In your opinion, has the attractiveness of developing anaerobic digestion capacity increased or decreased since July 2020, the pre-launch consultation on Future Support for Low Carbon Heat? If so, why and to what extent? Do you expect changes to be long or short term?**

   In our view the attractiveness has neither increased nor decreased since 2020. The number of projects coming forward under the Green Gas Support Scheme (GGSS) would indicate that the tariffs are about right. There hasn't been a surge in applications, but equally there has been a reasonable number of applications (11 to date), spread out over time, suggesting the tariffs are sufficient to develop viable projects.

   It is also worth noticing the sector is now more mature and has seen a certain level of consolidation, with fewer developers planning greenfield projects and more acquisitions and improvements to existing assets taking place.

   Some members commented that the attractiveness of the scheme for new development may increase once mandatory food waste collections are rolled out in England.

2. **Have changes in the macroeconomic context and/or supply chains since July 2020 increased or decreased the challenges associated with developing and/or operating anaerobic digestion plants? If so, why and to what extent? Do you expect changes to be long or short term?**

   <u>Current energy prices will not be used in financial models for new biomethane projects</u>

The recent, significant surge in energy prices (both gas and electricity) has certainly had a significant impact on biomethane project capital and operational costs, as well as revenues for currently operational plant.

However, it is important to note that a company looking to develop new biomethane projects will not be able to use today's gas price in their financial models. The current market is extremely volatile and there is significant uncertainty over whether and for how long gas prices will stay as high as they are now.

A new project being developed under the Scheme is expected to be commissioned (roughly) 18 months from financial close and the gas prices used in financial models will need to be those predicted for 15 years from the point of commissioning. Given the significant uncertainty around future gas prices, it is highly unlikely that funders will approve financial models for new projects based on gas prices that are significantly higher than those that would have been used in 2020.

Inflation rates

The current rate of inflation is higher than the Bank of England's target of 2% and is widely expected to rise further. There remains significant uncertainty over the eventual peak of inflation, how quickly it will fall (or even be followed by a period of deflation), what the actual impacts of that will be on project income and costs and any implications on the ability to fund projects in the future. Given the huge uncertainty over all of this and the wider macroeconomic picture, these effects should be considered in the 2023 review – but should not colour decisions made in the current review.

In this context, it is also likely that the current tariffs do not reflect the higher-than-expected CPI rate of inflation in 2021.

At the time the GGSS tariffs were confirmed by BEIS in March 2021, they would have been based on an assumption on the estimated 2021 Consumer Price Index (CPI). It is very likely that the estimate used was lower than the actual inflation rate over the year. CPI for 2020 was 0.6% and the Bank of England's quarterly report immediately before the GGSS tariffs were confirmed projected that 'inflation should return to around our 2% target later this year'[1] – in other words, that the rate for 2021 as a whole would likely be lower than that 2% target.

The December 2021 annual CPI rate turned out to be 5.4% according to ONS bulletin, but the GGSS tariffs weren't adjusted accordingly in April 2022. Thus, the tariffs are already likely to be lower than they should have been according to the actual inflation. Although the impacts of higher gas prices are likely to be temporary, the loss of value due to not keeping up with the inflation rate will affect the entire lifetime of the plant.

We would stress that, although increases in gas prices for currently operational plants will lead to a net increase in revenue, these are unlikely to remain permanently high. As stated above, they are also not likely to be relied upon by funders considering investment in plant in the short and medium term. There are many areas, however, where increased inflation will harm project returns by increasing opex and capex. Where the project capex has increased significantly it is of no benefit to the project if the impact on the wider market is only temporary. Even if prices for other projects fall back in future, the increased cost for the earlier project will be permanently locked in.

In this regard, the spiralling inflation rate and uncertainty over what will happen next is of serious concern to potential project funders and developers. Financial models typically

[1] Monetary Policy Report - February 2021 | Bank of England. Text quoted from section under the heading 'Inflation is below our target'

assume that the Bank of England's target of 2% inflation will be met on average over the project lifetime. Fears that this will not be the case or that impacts will vary widely between different elements of cost and revenue will increase perceptions of risk around projects as a whole.

The inflation estimate currently used for GGSS costs is 4% in 2022, however we know that CPI rose by 9.0% in the 12 months to April 2022, up from 7.0% in March and according to the Bank of England the rate of inflation is likely to keep rising this year, to around 10%.

Higher inflation will have an impact on equipment costs as well as labour and construction materials, such as concrete. Some of these sectors were already facing surges in demand prior to the war in Ukraine and the recent events would have only made the situation worse and are likely to have driven up the costs.[2]

Inflation rates will also have a greater impact on operational costs than capital costs as the former are reccurring over the lifetime of a project. Financial models will be vulnerable to inflation increases in a number of areas where these risks appear high:

- Fertiliser, labour and diesel costs for crop cultivation (agricultural AD plants)
- Labour and diesel costs for the waste sectors – these sectors will also be affected by HGV drivers' shortages, a problem that became significant last Autumn and that can only have been addressed by increasing wages for the drivers
- Broadly similar increased costs for digestate spreading
- Diesel costs have also gone up very substantially as a result of the removal of entitlement to red diesel from the waste sector (which includes farm-based digesters where the activity is not directly linked to agriculture). The REA continues to campaign for this policy decision to be reversed, but no project model could assume it will be until or unless the government announces it (see further details below).
- Electricity costs – very few new projects will be generating their own electricity so they will be exposed to increases in electricity prices as higher costs
- Most of these plants will also need significant heat and it won't be waste heat from their own CHP engines. As highlighted to BEIS before, the biomethane payment formula set out in the GGSS regulations does not encourage more efficient uses of available heat on site (heat pumps, heat recovered from digestate etc). Many sites will be importing gas from the grid (at retail prices) to supply heat to the digesters, as it does not make commercial sense to use their own gas to generate this heat. This will significantly reduce the net benefit to future projects of higher gas prices, even if these remain high
- The cost of propane – which still needs adding to the biomethane to bring up its calorific value - will have also gone up, eating into the benefit biomethane producers gain from increased income on gas sales

Red diesel

The changes to the rules surrounding the use of rebated red diesel came into effect on 1st April. All industries/sectors that are not exempt will have moved to full-duty fuels by 1st April. This affects certain sectors such as construction, logistics and haulage, waste management and others. Agricultural activities are exempt, however agricultural plants will include

[2] Further discussion on the potential impacts is set out in the most recent Bank of England Monetary Policy Report, under 'Box B': Monetary Policy Report - May 2022 | Bank of England

numerous activities (e.g. mobile machinery and others) that are not classed as agricultural. The new rules will see a significant increase in the opex of projects.

Environmental management

EA has been progressively tightening its expectations from all AD plants in terms of design and operation. At the same time, full implementation of the farming rules for water and the challenges of removing contamination from the feedstock provided to plants (especially, but not limited to plastic) means digestate is getting ever harder to spread to land. This is affecting opex of handling and applying digestate to land. Further, there is a significant risk these will increase further over time as tighter regulations will either require operators to invest more in storage, or in enhanced techniques that make it easier to handle digestate and add value to it.

We fully support efforts to improve quality and ensure that digestate is increasingly seen as a valuable resource. The comments above merely highlight that they are also likely to lead to increases in costs – and uncertainty over them can weigh heavily on the viability of projects.

Brexit

Most specialist equipment for biomethane projects is manufactured in continental Europe and we know Brexit has caused significant delays for critical equipment and spares. The only way to mitigate these delays is for developers to order extra spares, which adds to the upfront cost of the project, and hence the capex/working capital requirements when seeking funding. Any unexpected disruption in delivering of critical spares that leads to not being able to operate will have a major impact on project economics and cash flow since projects will continue to incur costs while having no income.

As previously highlighted, we also know there have been significant HGV driver shortages which in the UK have been made worse from Brexit. To secure HGV drivers, companies must be prepared to pay them more.

Delays in the implementation of food waste collections

The introduction of separate food and garden waste collections in England has been delayed and there are no firm details from Defra on when exactly these will be rolled out and how. Defra's response to the 'Consistency in Recycling' consultation published in July 2021 has not been published yet and this has created significant uncertainty amongst biomethane project developers on the sources and volumes of wastes they will be able to secure. Even if funders accept that mandatory food waste collections will eventually be rolled out, the actual impact can only be assessed when the specifics are known – and the impacts on particular areas may well differ.

Business rates

As part of a wider government business rates review, the HMRC's Valuation Office Agency (VOA) has been reviewing its business rates assessments. The change of methodology and to the calculations used to work out business rates have triggered significant increases for AD plant owners, particularly biomethane producers. These have seen annual charges rise substantially over the last few years, now typically £30,000 - £75,000 per MW capacity.

From April 2022 the government has introduced an exemption from business rates for eligible plant and machinery used or intended to be used for the generation, storage, transformation or transmission of power from a number of sources, including biogas.

We don't have the full details about this exemption yet as the VOA has not released detailed guidance, but the wording used in the legislation would suggest this doesn't apply to

biomethane plants unless they generate onsite renewable power. As noted above, although onsite electricity generation has been a feature of most biomethane plants to date, it is far less likely for projects under the GGSS. This is due in no small part to the closure of renewable energy support schemes such as the Renewables Obligation, Feed in Tariff and RHI (for heat generation).

Insurance

Insurance represents a significant cost and biomethane projects are finding it harder and harder to get insurance – both in terms of a reduction in the number of insurers in the market and an increase in the premiums charged.

RePower EUPlan

The European Commission (EC) published its REPowerEU Plan on 18th May 2022[3]. The Plan comes following the Russian invasion of Ukraine and the consequent disruption to global energy systems. The measures proposed in the Plan aim to accelerate the renewable energy transition to phase out European dependence on Russian fossil fuels. While actions to limit the import of Russian fossil fuels fall under the European sanctions regime, REPowerEU focuses on transitioning the energy sector in the European Union (EU) to foster resilience and sustainability.

RePowerEU includes strong commitments on biomethane, including increasing annual sustainable biomethane production to 35 billion cubic meters by 2030 and a new Biomethane Industrial Partnership to support the achievement of the target and create the preconditions for a further ramp up towards 2050.

Biogas/biomethane has an important role to play in the UK and EU in advancing the decarbonisation of our gas supplies and reduce dependence on imported gas (as well as providing dispatchable renewable power like other forms of bioenergy). It is therefore crucial that Government continues to support this sector and boost domestic biomethane production.

Although we strongly support these measures it is possible that they would have a negative effect on the attractiveness of investing in biomethane projects in the UK, if not matched by an equivalent level of ambition in the UK:

- equipment suppliers may focus their efforts on EU markets, resulting in reduced availability or less competitive pricing of equipment for UK projects
- similarly, funders may prefer to focus their attention on markets where the opportunities for growth are greater
- An increase in the availability of biomethane produced in the EU may reduce prices that can be achieved for green gas certificates from UK production. Similarly, it may increase the availability of unsubsidised biomethane that can be supplied to meet the RTFO, thereby reducing potential revenues to UK producers
- Over the lifetime of projects that have not yet been built, the long term impact of the EU's response to the Ukraine crisis and wider climate change policy is expected to reduce demand for gas as a fuel, which may well mean long term prices for gas are actually lower than historic averages.

[3] REPowerEU: affordable, secure and sustainable energy for Europe | European Commission (europa.eu)

In presenting these possibilities we are not stating that they **will** happen (or to what extent) but to highlight some potential risks to UK producers if UK policy does not keep pace with developments in the EU.

In summary, we would strongly discourage BEIS from using the annual tariff review mechanism to make significant changes to the GGSS tariffs (e.g. decrease) as doing so could unsettle developers and undermine future investments in this sector at a time we really need to boost our domestic biomethane supplies. Unless BEIS are confident that the long-term viability of these projects has drastically changed in light of macroeconomic and/or supply chains changes, and that these changes are expected to last in the long term, we do not believe there is a good justification for decreasing the tariffs at this time.

Small scale, on-site biogas plants

As an additional note, there is significant potential to increase biogas output and improve our energy security based on a range of industrial and farming bio-residues that have not yet been fully accessed. After the closure of the RHI there is no support for smaller off-grid biogas production - the Green Gas Support Scheme excludes smaller off-grid biogas plants. If we are to reduce fossil fuel use in providing heat and as transport fuel, it is crucial not to limit the supply and use of biogas (or indeed biomethane) only to sites connected to the gas grid. The case for smaller scale, on-site biogas is further detailed in these briefing notes written by our member FoodChains. Inclusion of these projects should be considered as soon as possible by BEIS.

3. What are currently the biggest challenges that owners face in operating biomethane anaerobic digestion plants?

See above. Operational costs will have gone up significantly due to rising inflation rates. While for operating plants these costs are likely to be counterbalanced by increased revenues from gas sales the same is not applicable to new projects.

4. Have there been any technological developments or improvements in equipment since July 2020 which have materially affected the cost profiles of biomethane anaerobic digestion plants?

Given the ambitious targets set by *RePower EUPlan* on biomethane[4], if anything the industry may face an increase in equipment and supply chain costs due to increased competition with other EU countries that need to secure critical pieces of equipment to meet such ambitious targets.

5. What are currently the biggest challenges that developers face in raising finance for biomethane anaerobic digestion plants?

The biggest challenge is the significant uncertainty around a range of variable costs that are unpredictable.

[4] The Plan has committed to increasing sustainable biomethane production to 35 billion cubic meters by 2030 and a new Biomethane Industrial Partnership will be formed to support the achievement of the target and create the preconditions for a further ramp up towards 2050. EBA's press release here. For more information, REA members can read a summary here, and read the EC press release here.

Plant performance is still largely unpredictable compared to other technologies due to the nature of the process (biological).

The scale of funding required is also a challenge. The funding required is too high for a farmer or a SME to invest in but too low to be attractive to larger investors relative to other technologies such as solar PV or wind. Each project is different and the amount of complexity that needs to be grasped is small relative to the capital that can be deployed. This is why nobody has yet managed to develop a portfolio of £100m +, let alone a more sizeable one.

The combination of GGSS tiering decisions and reduced tariffs are leading new projects to be larger than those seen under the RHI. This may well help improve the above situation. But this is dependent on these larger plants being shown to work successfully – and on a feedstock diet that derives no more than 50% of its energy from crops.

Models are very sensitive to assumptions on performance levels. Even if all goes well, investors may take time to get comfortable with these changes – and confidence could be very severely dented if even a handful of projects are seen to fail badly.

6. **Have changes in the macroeconomic outlook increased or decreased the challenges associated with raising finance for anaerobic digestion plants?**

   See answers to questions 1. There is significant uncertainty around the impact of inflation rates on project costs, which we didn't have in 2020. This level of uncertainty is likely to affect how cautious investors/funders are in investing into these projects.

7. **Have other developments in capital markets increased or decreased the challenges associated with raising finance for anaerobic digestion plants since July 2020?**

   Neither as far as we know. Uncertainty around currency movements might also factor into developers and funders' perception of risk. Even if the markets end up not being negatively affected, funders may still be cautious. We have examples of projects developed in 2016, where the funder took out a fairly costly hedge on foreign exchange costs shortly after the Brexit vote. Even though it was a cost, they weren't prepared to be exposed to risks if GBP fell further and took the view that they had no desire to be in the currency speculation business.

8. **Are the GGSS's tariff tier threshold levels and differentials appropriate, in your opinion?**

   Yes, we believe they are appropriate.

9. **Are the levels of Expenditure Thresholds for triggering a tariff degression appropriate?**

   The degression thresholds seem to be roughly right, as far as we can tell at this stage. The system has been specifically designed for biomethane projects under the GGSS, and it is therefore more likely to be suitable for biomethane compared to the degression mechanism designed under the RHI.

   If we understand this correctly, the annual budget figures are based on market intelligence and performance factors, whilst the expenditure thresholds are more mechanistic. As stated on the BEIS budget management page, the forecast used for degression '*is not a forecast of expected spend, but rather a forecast of the maximum possible spend on those plants*'. This is probably appropriate, although all we know at the moment is that the scheme spend is

nowhere near triggering degression and we are unlikely to see a massive gold rush given the tariffs are less attractive than they were at the start of RHI (and obviously no RO, FIT etc).

Given the significant benefits of indigenous gas production in the context of the current energy crisis (as previously highlighted), we believe BEIS should be willing to increase the Overall Scheme Expenditure Budget (and therefore the Application Budget cap) if it looks like this cap will be reached.

As said before, if current expectations of CPI over the next 12-24 months are realised (ie really rather high) there is no reason to reduce tariffs as a result. However, BEIS deployment forecasts use inflation projections that were published in October 21. These see inflation at 4% in 2022/23, 3.3% in 2023/24 and 2.2% in 2024/25 before falling to target levels of 2% from 2025/26. BEIS should consider that updating those values to the rather higher expected values will increase the projected spend on the scheme. Therefore, at the point at which BEIS decides to revise the inflation estimates used, it should also increase the levels for Application Budget cap, Overall Scheme Expenditure Budget cap and the Expenditure Thresholds. It is important to ensure these changes do not happen out of sync. If inflation assumptions were updated before AB and OSEB caps and expenditure thresholds were correspondingly increased then one or more trigger could be hit, resulting in no more applications for TGs being processed and/or degression occurring. Increased projected spend in that scenario would not be evidence that tariffs are too high or that actual deployment will be greater than anticipated – it would be evidence of nothing other than that inflation is high and risks getting out of control.

In summary, whenever BEIS choose to update inflation forecasts, they should do so at the same time as they also make corresponding increases to the budget management controls. On our understanding of the regulations, the expenditure thresholds can only be updated following an Annual Tariff Review. This would suggest that either these values are consistently updated following the current review or no changes are made until the 2023 review.

10. To what extent does the Renewable Transport Fuel Obligation impact the attractiveness of developing biomethane anaerobic digestion plants?

It is difficult to see the potential value of RTFCs making much difference to funding of new AD projects (as opposed to expansions of existing ones). RTFC values are set entirely by the market, which itself is driven by the decisions of those putting petrol and diesel fuels on the market. Demand for biomethane as a transport fuel is therefore dependent on:

- the market demand for that fuel: if there aren't enough gas-powered trucks using the fuel then there will be no buyers, regardless of the potential RTFC value
- Decisions of the oil companies: if they decide to meet their obligations by putting bioethanol/biodiesel into the liquid fuels they supply then they will not be interested in buying the RTFCs earned by third parties
- Biomethane produced elsewhere: unsubsidised biomethane from anywhere with a physical connection to the UK gas grid can be used to meet the RTFO obligation. So, if there is an increase in biomethane injected elsewhere (which there could be as a result of RePowerEUPlan), those supplying biomethane in the UK could buy it from abroad rather than UK producers and/or the prices available to UK producers would reduce

In addition, the RTFO does not accredit individual installations, so there is no protection for a biomethane producer from the above or from subsequent policy decisions under the scheme.

RTFO only has targets confirmed until 2032 – so that would be only around half a project's operating life if the project is going to commission in 2024/25.

The RTFO makes most sense when a project is no longer able to get tier one of RHI or GGSS. Given the increase in Tier 1 limits under the GGSS, we doubt many projects would go into tier 2 on a substantial part of their production.

11. To what extent do Green Gas Certificates impact the attractiveness of developing biomethane anaerobic digestion plants?

The value of Green Gas Certificates is likely to be considered in new project financial models. However, it should be noted that the revised GGSS Financial Impact Assessment published by BEIS in 2021 already includes '*Green Gas Certificate revenue in the tariff setting in light of new evidence to suggest that anaerobic digestion (AD) plants account for Green Gas Certificates in their cost models. Including this new revenue stream has a minor impact on the GGSS tariff. Further detail can be found in Annex B.'*

12. Have any developments in feedstock markets or feedstock availability altered the costs associated with operating or impacted the attractiveness of developing biomethane anaerobic digestion plants?

As highlighted above, the introduction of separate food and garden waste collections in England has been delayed and there are no firm details from Defra on when exactly these will be rolled out and how. Defra's response to the 'Consistency in Recycling' consultation published in July 2021 has not been published yet and this has created significant uncertainty amongst biomethane projects developers on the sources and volumes of wastes they will be able to secure. Even if mandatory food waste collections are eventually rolled out, the actual impact can only be assessed when the specifics are known.

13. Have any developments in organic fertiliser markets altered the revenue or selling potential of digestate?

Digestate market is very regional. The increase in the cost of inorganic fertilisers has certainly led to a higher demand for organic fertilisers (digestate and animal slurries) in some parts of the country, but this has not happened consistently across the UK.

14. Have any market developments altered the revenue potential from selling carbon dioxide produced by biomethane plants?

In September 2021, as the global gas prices spiked, two key fertiliser plants (CF Fertilisers) shut down raising significant concerns around a sudden reduced supply of carbon dioxide from these plants for industrial applications. Given these significant shortages, Government said they want to see measurers implemented to improve resilience and security of supply of carbon dioxide in the long term and are engaging with the sector to ensure this happens.

Bio-CO_2 captured at biomethane plants provides an opportunity to improve market resilience and security of supply. Our members that have employed carbon capture technology on their AD plants have said they have recently seen an increased demand for this commodity due to recent shortages and that there seems to be a slight, positive shift in the way bio-CO_2 from AD plants is seen by the Food and Drink sector.

However, our market intelligence also suggests that average market prices haven't increased significantly. These are still relatively low and not sufficient to justify the investment in the capital and operational costs required to deploy carbon capture at these plants.