Combined Heat and Power (CHP): the route to 2050 - call for evidence
REA Consultation Response

The Association for Renewable Energy & Clean Technology (REA) is pleased to submit this response to the above consultation. The REA represents 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 over 500 corporate members of the REA, making it the largest renewable energy trade association in the UK.

BEIS have published a call for evidence seeking views on the future role of efficient co-generation of heat and power to support achievement of the Government Net Zero emissions target by 2050. This includes:

- the current benefits from Combined Heat and Power (CHP)
- the future role of CHP generation in achieving net zero greenhouse gas emissions by 2050, and supporting green recovery
- how the technology might support the decarbonisation of heat and industry.

We consider that Combined Heat and Power has an important role to play in the decarbonisation of power, heat, industry and agriculture, when powered by renewable fuels. Government should be aware of the wide variety of technologies that can power combined heat and power systems, many of which were not specifically identified within the call for evidence. These include:

- Biomethane from Anaerobic Digestion (AD)
- Biomass CHP using virgin or waste wood
- Energy from waste utilising refuse derived fuel or other residual waste
- Advanced Conversion Technologies using waste or biomass feedstocks
- Geothermal CHP
- Renewable Power to Gas
- Bio-Synthetic Natural Gas (Bio-SNG)
- Renewable Hydrogen
- Sewage Treatment Works CHP
- Green liquid fuels such as green methanol or green ammonia

Government should therefore continue to provide support for CHP schemes and ensure that it is appropriately flexible to support a wide range of renewable technologies and fuels to power them.

Consultation questions

1. Do you agree with our characterisation of the benefits and incentives?

Benefits of CHP

We broadly agree with the benefits of CHP as identified within the call for evidence. In particular we highlight the following:

- These schemes can provide dispatchable power, giving more flexibility to the energy system.
- They can also provide 'resilient operation' i.e. the ability of a CHP operator to provide continuous electricity and heat generation to their facilities in the absence of, or as a response to, a network interruption.
- They can also meet onsite energy (power and heat) demand from multiple industry sectors, such as the agri-food sectors as well as farming. In other words, small scale CHP units can provide both heat (space and process) and electricity to industrial units as well as provide energy for farms that are off the grid. These schemes would also have the benefit of enabling the on-site treatment of the wastes, residues and effluents arising from the industrial site or farm and convert these into clean energy. The REA's Bioenergy Strategy final report (2019) states that 'use of residues or wastes on-site is, where possible, preferable as the most economic, energy and carbon efficient' (1)
- These schemes have strong potential in industrial and larger scale commercial sites helping to decarbonise buildings with high energy consumptions. In certain situations, such as food production, and agricultural diversification, the ability to provide both heat and power can make a project more commercially viable as well as helping to decarbonise multiple energy vectors.
- They feed into heat networks, which are a key technology to decarbonise heat and an important growth area for the UK.
- As illustrated above – CHP can use a wide variety of diverse renewable fuel sources.
- With Government rightly focussing on the urgent need to increase UK industrial productivity – investment in CHP by companies that have suitable heat and power loads provides an effective route for improving business efficiency.
- CHP technology could also reduce pressures on the national grid and avoid local emissions from gas/oil heating boilers when there are with adjacent heat and power users.

Current Policy Framework for CHP

We also broadly agree with how the call for evidence characterises the current incentives for CHP. However, we would like to stress that there is a substantial policy gap opening up as we come to the end of the Non-Domestic Renewable Heat Incentive (ND RHI). The delivery of the third allocation round for Tariff Guarantee's has helped mitigate this concern in the short term, providing some additional time for projects to build out under the ND RHI. However, this still only gives projects up to March 2021 to apply for support, even if they commission later. Planning delays from COVID-19 still mean that sites could miss this important economic support mechanism.

Once the Non-Domestic RHI closes to new applications there is limited evidence of new schemes that might help replace it. Those that have been announced also have been limited in their scope and not necessarily relevant to CHP. This includes:

- The Industrial Energy Transformation Fund (IETF) limits Biomass CHP to off gas grid areas - restricting the number of sites where such projects could be applicable.
- The Green Gas Support Scheme (GGSS) is focused on biomethane to grid.

- The Clean Heat Grant Scheme is focused on small scale heat-only installations, so CHP is not relevant to that either.
- No CHP projects have yet commissioned under the Contracts for Difference (CfD) scheme, providing evidence that this is not seen as a favourable route to market for new CHP projects.
- Details of the Green Heat Network Fund are yet to be published, but clearly will only target projects feeding into heat networks, which may not always be applicable. The Government's Heat Network Investment Programme (HNIP) and Heat Network Delivery Unit (HNDU), which has been operating for a few years now, has been slow to support CHP schemes.
- Details about the Public Sector Decarbonisation Scheme, announced in the Chancellor's 'Plan for Jobs', are yet to be published and it is not immediately evident if this will be applicable to decarbonising heat or CHP.
- There remains no investable mechanism to encourage fuel switching for industrial decarbonisation despite its recommendation by the Committee on Climate Change (2)

Therefore, come March next year, aside from the limited benefits provided by the CHPQA, there is currently no clear evidence of ongoing support for industrial heat decarbonisation or new CHP plants that have maximum efficiency potential at any scale.

This is a serious policy gap in relation to the UK's Net Zero carbon emission targets, especially from 2023 when the fourth carbon budget period starts and the pipeline for new CHP projects is dwindling. **A more comprehensive and focused strategy is needed from Government if they are to see significant decarbonisation in the industrial sector and new CHP projects coming forward, and also to ensure far greater lifecycle GHG emission savings are achieved and *added value is delivered*, such as helping meet the objectives of the Clean Air Strategy.**

In addition, the resulting changes from Ofgem's Targeted Charging Review (TCR), both in terms of increasing residual network charges and reforms to Embedded Benefits have had a negative material impact on the business case for CHP, reducing the potential revenue available for the power component of the project. This, combined with the marked drop in energy prices over the last 18 months, has undermined investor confidence in renewable power generation and in some cases, has made straight heat or power projects a preferable proposition, despite the fact CHP projects can deliver high efficiencies and substantial lifecycle emissions GHG savings This will need to be addressed within future support mechanisms.

Finally, in addition to the points made above, it is worth noting that:

- Generators supported under the Feed-in Tariff Scheme will start to see the end of the financial support for their renewable power output in around ten years' time. This will likely result in the reduction of decarbonised electricity generation at a time when the national effort to increase decarbonisation is particularly needed.
- Older biogas CHP plants (e.g. in the sewage treatment sector) will see the end of their Renewable Obligation Certificates (ROCs) in a few years' time, potentially as early as in 2023. If no viable alternative is provided by Government to support their CHP engines, some operators may decide that it is financially unviable to continue to run their obsolete engines. Potentially this may result in some of the biogas being flared. This practice would certainly have an impact on the life cycle GHG emission profile of AD site.

- Similarly, ROCs will also be ending for landfill sites with CHP engines. There is an opportunity for these sites to use heat and power from their landfill gas fuelled CHP to upgrade the gas to biomethane for HGVs or the local gas grid. This potential will not be fulfilled unless a mechanism is in place to support CHP.

References

(1) The REA Bioenergy Strategy (2019) can be read here: https://www.bioenergy-strategy.com/
(2) CCC (2020) Reducing UK emissions: 2020 Progress Report to Parliament, page 112. https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/

2. Do you have any additional points to make on the current incentives?

2.1 AD generators accredited under Feed-In Tariffs are still unable to replace their CHP engines without risking losing accreditation

This issue has been raised to BEIS for a number of years, but a solution has not been put in place as yet.

Under the Feed-In Tariffs scheme, according to Ofgem's legal interpretation of the regulations, where a generator must replace all of the generating equipment (e.g. a CHP engine) as a result of faults or age, this would be considered as decommissioning the site. Instructing such maintenance could therefore result in the loss of their FIT accreditation.

BEIS are aware of this issue and in their July 2018 consultation (1) on the closure of the Feed-in Tariff Scheme, BEIS have recognised they believe it is appropriate to consider clarifying the arrangements for the replacement of generating plant under the scheme. On this issue the Government response (2) stated *"Government has decided to spend more time examining possible effective and proportionate options before taking a final decision on a detailed consultation on this issue. A response will be published in due course."* However, the response was never provided by BEIS.

The REA has provided BEIS with suggestions on how they can ensure replacement of generating plant does not lead to greater spend under the scheme.

It should be noted that a mechanism for replacing the plant is in place under the Renewable Heat Incentive Schemes, which enable like-for-like replacement of plant.

This issue has meant that many AD operators accredited under FITs have either been unable to replace their engines when these break down or are faulty, with significant financial loss, or had to replace parts of the engine even when this is inefficient or uneconomic, knowing that replacing the whole generating set would compromise their accreditation. This also means that an increasing number of AD plants may be running their engines half of the time, and flaring gas off for the reminder of the time. Less efficient engines also may result in higher emissions to air. It is important to note that the Environment Agency's guidance on the appropriate measures to be followed by biowaste treatment plants state: 'You must minimise the operation of the flare and use it only for emergencies and during maintenance to protect the integrity of the plant (for example, start-ups or shutdowns). You must not use flares

routinely.' Thus, the lack of a mechanism to replace whole generating equipment under FITs may make it impossible for operators to comply with these requirements.

It should be noted that:

- AD Generating equipment needs to be replaced at least once over the lifetime of the tariff. If faults or breakdowns occur, this may be more often.
- Engine life spans are 15 years and while an engine can be overhauled a second time for longing this, it is important to be mindful that the balance of plant (switchgear, controls, contactors etc.) will have an increased failure rate due to their age.
- As said above, in situations where engines are faulty or break down and were supplied by companies that are no longer in business, AD operators are increasing requesting the manufacturers to replace parts of the engine, knowing that replacing the whole generating set would compromise their accreditation. However, the manufactures are very reluctant to replace parts of engines (e.g. the engine part, but not the alternator) as it is challenging to fit an engine of a certain make with an alternator of another make. In most situations the most appropriate solution would be to replace the whole generating equipment.
- According to engine manufacturers, a new engine will only be marginally higher in efficiency (e.g. 1 – 2% more efficient). This is unlikely to make any difference to the FIT income of AD plants.

This issue needs to be addressed by BEIS as a matter of urgency, introducing a mechanism for FIT accredited biogas CHP generators to replace their engines.

2.2 Government must set out how they plan to support geothermal technologies

Geothermal technology has the advantage of being able to provide baseload heat and electricity or can be set up as dispatchable power as needed. Current support mechanisms have not worked for this technology: there is a group of Geothermal projects that are unlikely to meet the RHI March 2021 application deadlines for either a 3rd allocation tariff guarantee (TG) or extension application. Geothermal Engineering and Eden Geothermal have raised circa £30 million of public funds with £10 million match funding for two projects set to commission in 2021 and 2023 respectively. Similarly, GT Energy has been working with Stoke on Trent to deliver £20mn investment in a heat network powered by Geothermal technology. Uncertainty over the RHI and a lack of any mention of Geothermal in the Future Heat consultation has greatly unsettled financiers of such projects. The extensions and timeframes proposed for the RHI under the TG route are expected to be too tight for these projects to effectively deploy and sufficiently complete applications. BEIS should seek to make clear their intentions around this technology and establish how existing projects can continue to be supported, either through longer commissioning times or stipulating where alternative support for can be expected to come from via other mechanisms.

2.3 Policy and regulations need to clearly establish 'grid delivery' of renewable gas as a method to deliver renewable gas to CHP/DH schemes

When such schemes fuelled by natural gas already exist, co-locating a biogas or bio-SNG production plant would be unviable in most cases. The most cost-effective way to decarbonise these schemes is for them to source renewable gas supplies from the gas grid, or potentially

via bio-CNG dispensing trailers (as demonstrated for remote distilleries in Scotland, previously using heavy oil for boilers). This can deliver GHG savings without requiring any changes to plant or their maintenance schedules.

To source renewable gas from the grid (referred to in this document as "grid delivery of biomethane"), an appropriate tracking methodology needs to be adopted. Similarly, CHP systems should be assessed and valued against other options for decarbonising based on their energy efficiency and environmental performance – this should include participation in the CHP Quality Assurance Programme (CHPQA).

Grid delivery of biomethane is already well established under the Renewable Transport Fuel Obligation (RTFO), where tracking must be completed according to a mass balance methodology. Several schemes are already in use to evidence mass balance e.g. ISCC, RED Cert. Guarantees of Origin (GoO) can also be used to evidence grid delivery according to a book and claim methodology and the Green Gas Certification Scheme (GGCS) is already working with 65 biomethane plants to issue GoO.

However, the current policy, planning and regulatory frameworks do not clearly identify grid delivery of renewable gas as a method by which the gas can be delivered to CHP.

BEIS should consider if either of the above tracking mechanisms are appropriate to CHPs, or if adaptations would be needed, and **then set out the evidence and reporting requirements that CHP plants would be expected to follow**.

Clearly **establishing the principle and method by which renewable gas can be delivered to CHP and tracked with Guarantees of Origin** would open up new ways of incentivising biomethane production. For example, if those CHP plants or district heating schemes were then able to report under the future UK emissions trading scheme that all or some of their gas use was biomethane and therefore zero emissions (3) then a financial incentive is introduced for them to purchase biomethane at a price equivalent to the savings they may make. Other benefits such as Climate Change Levy exemptions could be introduced, while for new CHP schemes, as set further down in this document, recognition with the planning system could make developers commit to sourcing renewable gas.

Carbon savings from biomethane used in district heating schemes are not recognised by Building Regulations (i.e. there are no biomethane 'factors' in SAP/SBEM or clarity on the use of Guarantees of Origin or Mass balancing to evidence grid delivery of biomethane). This issue should be addressed.

As the Government further develops its Future Homes Standard policy to move from near-zero to zero carbon homes - and extend Net Zero planning requirements to all new development – linking new district heating schemes to grid delivered biomethane could provide an additional route to decarbonise for sites where technologies such as large-scale heat pumps were unviable.

2.3.2 Government should consider introducing a market incentive / obligation targeted at decarbonising CHP schemes

There are currently no market incentives for CHP or district heating schemes that run on natural gas from the grid to use alternative renewable fuels such as biomethane, bio-SNG or

biomass. The Government should consider the merit of introducing a market incentive or an obligation to decarbonise these schemes.

As with the Renewable Transport Fuel Obligation (RTFO), under such an obligation or market incentive, BEIS would need to define how tracking should be done. This could potentially support biomethane production that is not financially supported under other Schemes such as the Non-Domestic Renewable Heat Incentive and the future Green Gas Support Scheme. Under the recent consultations on the future Green Gas Support Scheme (GGSS) and the closure of the Non-Domestic Renewable Heat Incentive, BEIS has confirmed they plant to allow biomethane producers participating in these Schemes to flexibly access the Renewable Transport Fuel Obligation. BEIS could allow the same flexibility for grid delivery or direct delivery of biomethane to CHP schemes and decide how that grid delivery should be evidenced – either via a GoO method or a full mass balance.

2.4 Government must consider the opportunity to support a value and market development for carbon (ref BEIS document Updated Short-term Traded Carbon Values April 2019)

The UK will be leaving the European carbon Trading scheme (ETS) in December 2020 (Brexit). The Government is currently developing a UK trading scheme, but this is expected to be mainly targeted at large scale emitters, so there will be a policy gap. We would recommend that any new UK scheme takes a visionary approach. For example, this could consider extending the trading methodology to include smaller scale carbon emitters and savers. Developing a much larger carbon market will establish a trading value and deliver a new non-government route to support decarbonisation. Valuing carbon more transparently and at a more 'retail' scale would drive investment based on a market trading value (push and pull incentives). A green taxonomy like the emerging EU taxonomy (which UK is likely to opt into) will support carbon assessment and quantification and provide validated access to green investment.

As highlighted above, CHP systems that operate under the UK ETS scheme should be able to source biomethane from the grid ie grid delivery of renewable gas should be clearly identified as a method by which the gas can be delivered to CHP under the ETS. If these schemes can then report that all or some of their gas use was biomethane and therefore zero emissions[2], then a financial incentive would be introduced for them to purchase biomethane at a price equivalent to the savings they may make.

References

(1)https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/726977/FITs_closure_condoc_-_Final_version.pdf

(2)https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765647/FIT_Closure_Government_Response.pdf

(3) Under current EU ETS guidance bioenergy is rated as zero emissions.

10. What scope is there to increase the use of alternative, low carbon and renewable fuels for use in CHP plants? Are there any specific considerations in relation to hydrogen?

[2] Under current EU ETS guidance bioenergy is rated as zero emissions.

We have highlighted below some examples of sectors where CHP schemes fuelled by renewable fuels are critical to decarbonisation:

1. Agricultural sector

Most UK farms are off the gas grid, particularly small ones. In these situations, on-farm anaerobic digestion with supported CHP would enable the replacement of fossil fuel heat required for farm buildings, onsite drying processes (such as in food production) and the households, neighbours and agricultural workforce's own households demand with renewable heat from biogas (as both, heating and hot water supply), whilst delivering numerous additional environmental and agronomic benefits, such as potential for chilling/cooling as well. In addition to decarbonising off-gas-grid heat, significant and cost-effective greenhouse gas mitigation could be achieved by the controlled/managed processing of livestock slurries and fertiliser replacement using renewable biofertiliser. This is especially important when land spreading pressures are mounting on farmers to better manage livestock wastes due to cumulative nutrient loading issues on hydrogeological catchments and to enable the viability of ammonia emissions control (leading to 'secondary particulate matter' in urban areas, as covered in the UK Clean Air Strategy). Creating suitable renewable energy incentives rather than just giving money for covered storage could greater 'added value', for example.

There is still an opportunity and significant interest in this kind of project in the farming sector, specifically around dairy sites and energy hungry diversifications as well as in the yards of larger estates with high heat and electricity requirements.

Generating renewable heat and power onsite is the first pillar of the NFU's recent Carbon Neutral 2040 plan (1). Specific examples on the use of CHP are set out in this recent NFU paper (2)

Some consultants as-members of the REA have recently been approached by a number of different sites that are looking into the development of small-scale CHP sites. However, without Government support these types of projects would not be viable. Especially after the closure of the ROCs, RHI and the Feed-in Tariff (FITs) scheme it is unlikely these projects will ever become feasible and these sites will continue to rely on either grid energy, or, in the cases of the agricultural sites, oil or gas based generation, to meet demand. This will stop wider technical and scientific advancement in the improved agronomic development of rural economies, such as for bio-chemical production and bio-refining.

We therefore recommend that these types of projects are supported under the policy the Government intends to bring forward to decarbonise heat, particularly in relation to projects that will not be supported under the Clean Heat Grant Scheme and the Green Gas Support Scheme.

2. Food and beverage sector

Similarly, on-site anaerobic digestion deployed at factory sites, especially in the food and drinks sector, could provide part of the heat requirement for these manufacturing process, which would replace some of the fossil fuel heat, especially within processes that have a significant heat requirement (distilleries, breweries etc.). Nestlé, Diageo, and First Milk are

examples of companies using on-site AD to process biodegradable production residues to generate CHP heat and power that could be used on site to some extent. It would need to be combined with other low-carbon technologies that are dispatchable and can generate high-grade heating, such as biomass.

These companies have carbon targets and should be supported in their actions to reduce the carbon impact of their processes.

As an additional point, the experience of COVID has increased the UK's focus on meeting more of its food requirements domestically. It is likely we will see an increase in in UK production and hence need to ensure that this is managed in the most sustainable way possible.

There are members who are looking at developing AD projects on industrial applications where typically a combination of solid waste and wastewater from the industrial processes is used to generate biogas.

WRAP (2018) estimates that UK food manufacturing produces 1.5 Mt of food waste per year, with 6,700 SME's accounting for 97% of businesses. REA members' have estimated that just 100 of these businesses (1.5%), with the addition of on-site AD producing 100 m^3 of biogas, each generating circa 4 GW of heat per year (or 1.8 GW electric and 2.2 GW heat in a CHP), could supply 400 GW per annum of clean heat or over 30,000 tonnes of HGV fuel.

While larger agri-food corporates like Diageo or Arla may have the financial and technical resources to make great strides towards zero carbon manufacturing, this is not the case for the many domestic SMEs that proliferate the agri-food sector where limited government policies exist to support their transition to Net Zero. Therefore, it is vital that some form of support is accessible to all businesses (including SMEs) and plant sizes (including <600kW_{th}) so that the whole of the sector works together and proportionately to decarbonise as quickly and constructively as possible. New areas of innovation and sustainable technologies also will likely arise from supporting such forward-thinking SMEs.

The REA estimate that there are around 30 biogas CHP projects ≤600 kW_{th} currently in development under the NDRHI. In response to extensive lobbying from the REA and industry – including a recent REA letter (3) to the BEIS Minister of State, Kwasi Kwarteng MP – Government has recently announced (4) their intention to make further changes to the ND RHINDRHI Scheme to help smaller projects that were not eligible for Tariff Guarantees, such as biogas CHP plants ≤600 $kW_{th}$to complete.

3. Improving biomethane sites performance

CHP schemes can also help improve the overall efficiency of anaerobic digestion sites. Over the next few years a number of plants (e.g. biogas plants at sewage sludge treatment works) will reach the end of their support under the Renewable Obligation and some of these plants may see this as an opportunity to upgrade their assets from biogas to biomethane production sooner than their ROCs expiry date. This could boost additional biomethane production and injection into the gas grid. However, these plants will still need to keep their CHP plants going to satisfy the site energy requirements and optimise their energy efficiencies overall. This includes, for example, the supply of heat to the digesters, thermal hydrolysis and pasteurisation units as well as the energy required for the biomethane upgrade unit. The continuation of support for CHP schemes would therefore increase the overall site

performance. The waste heat from CHP engines could also be converted to extra power through organic rankine cycle (ORC) type technologies (e.g. for retrofitting) for electric vehicle (EV) charging and decarbonising transport but needs extra economic support to become viable.

4. Biomass CHP

As has been identified in the consultation document, biomass CHP using either virgin or waste wood, can meet higher and varying energy loads. In the right situations biomass CHP has a particularly strong role to play in commercial applications when supplying heat to district heating systems, this could include servicing public sector buildings such as hospitals, schools, public swimming pools and council offices. At the same time, industries requiring high heat loads such as distillers and brewers have been able to utilise biomass CHP to decarbonise their high energy requirements. Many of these sites are, however, typically sited in on-gas grid areas.

Concerningly, there seems to be a growing precedent for restricting biomass deployment to off gas grid areas, as is the case in the Industrial Energy Transformation Fund. Such a restriction ignores the results that can be achieved from deploying Best Available Techniques (BAT). It adopts an approach seen nowhere else in the world and sets a dangerous and difficult-to-reverse precedent which will further obstruct the deployment of renewable heat, particularly in larger buildings. This must be avoided in future policy aimed at supporting biomass CHP sites. This can be done by implementing tight emission and maintenance standards for urban biomass CHP projects instead of having an outright ban.

5. Energy from Waste

BEIS will be aware that most Energy from Waste (EfW) sites in the UK are CHP-ready in accordance with the requirements under environmental permits. However, compared to other European countries, the UK has not yet managed to capture the heat potential of EfW (5). This is due to several reasons which need to be addressed in future strategies focused on delivering CHP. This includes:

- Lack of incentive to develop CHP compared to just doing power. The price of gas and heat compared to electricity is low, making it difficult to build a business case around CHP with public sector support for the 'main' hot water pipeline, prior to spurring off for more local end users.
- EfW sites are not typically near residential areas or lack a nearby industrial heat offtake, so potential heat demand is too far away to make it worth transporting, unless Government support is provided for more innovative uses of waste heat. It is worth noting that Defra's Resources & Waste Strategy states under Section 3.2.1. that it wants to see more EfW operate in CHP mode. Many local authorities typically lack the resources to broker and manage the infrastructure development required to facilitate EfW CHP or to deliver local heat networks/main distribution pipes. Support from HNIP, HNDU, or further grants, may help address this situation if appropriately focused.

BEIS should also be aware of increased interests in Advanced Conversion Technologies, particularly following the introduction of the development fuel sub target within the renewable transport fuel obligation, that utilises gasification and pyrolysis systems with biomass and

waste feedstock to produce renewable transport fuels, green chemicals, or further heat and power. Such sites tend to be smaller and more modular than full scale energy from waste plants, so could be better sized to efficiently power smaller district heating systems.

6. Heat networks

The use of CHP could be greatly increased if heat networks become more established in the UK. Both BEIS's Heat Network Development Unit (HNDU) and Heat Network Investment Programme (HNIP) have helped drive deployment of district heating schemes, however uptake has been slow. It is also worth noting that of the heat networks supported under HNIP, 51% are still gas-fired. Notably, these could be indirectly fuelled by biomethane, should the '*Streamlined Energy & Carbon Reporting*' framework be updated to allow GHG emissions to be reported in such a way.

The Green Heat Network fund announced in the March 2020 Budget is a positive step towards enabling new and existing heat networks to adopt low carbon heat sources. However, details about this fund are yet to be published. Ultimately all new heat networks should be powered by renewable sources and the Government should consider phased targets over time to replace fossil fuel use in existing systems. CHP technology allows a flexible interface between the raw renewable energy and the fluid transfer system of a heat network.

References

(1) https://www.nfuonline.com/nfu-online/business/regulation/achieving-net-zero-farmings-2040-goal/
(2) https://www.nfuonline.com/nfu-online/science-and-environment/climate-change/doing-our-bit-for-net-zero-130820/
(3) https://mcusercontent.com/57981e55e365722b7bb40867b/files/e16c0af9-d3df-45b0-82ac-b8f3f5d8ae84/200724_Letter_to_Minister_Kwateng_Extension_of_ND_RHI_letter_.pdf?utm_source=REA+Member+List+%E2%80%93+GDPR+compliant&utm_campaign=c935cddc8c-EMAIL_CAMPAIGN_2020_06_01_12_52_COPY_02&utm_medium=email&utm_term=0_60f97b574c-c935cddc8c-250368733&utm_source=REA+Member+List+%E2%80%93+GDPR+compliant&utm_campaign=0292ce99f0-ORG_enews_2019_09_19_COPY_01&utm_medium=email&utm_term=0_60f97b574c-0292ce99f0-250368733
(4) https://www.gov.uk/government/publications/changes-to-the-renewable-heat-incentive-rhi-schemes/changes-to-rhi-support-and-covid-19-response-further-government-response
(5) See University of Birmingham and the Energy Research Accelerator (2020) Energy from Waste and the circular economy, page 33 for further details on maximising the potential for EFW CHP. https://www.birmingham.ac.uk/Documents/college-eps/energy/Publications/energy-from-waste-policy-commission-report-2020.pdf

14. Taking account of all the previous sections, what changes would you propose to the incentive framework for CHP to be better targeted to achieve decarbonisation and energy efficiency, while not impacting on industrial competitiveness?

As already highlighted above, our key asks are:

- Government should continue to provide support for CHP schemes and ensure that it is appropriately flexible to support a wide range of renewable technologies and fuels to power them.
- A more comprehensive and focused strategy is needed from Government if they are to see significant decarbonisation in the industrial sector and new CHP projects coming forward, and also to ensure far greater lifecycle GHG emission savings are achieved and added value is delivered, such as helping meet the objectives of the Clean Air Strategy. .
- BEIS should seek to make clear their intentions around geothermal technology and establish how existing projects can continue to be supported, either through longer commissioning times or stipulating where alternative support for can be expected to come from via other mechanisms in the longer term.
- Government must address the substantial policy gap opening up for CHP systems generating renewable heat as we come to the end of the Non-Domestic Renewable Heat Incentive (ND RHI).
- The inability of AD plants with CHP accredited under FITs to replace their CHP engines needs to be addressed by BEIS as a matter of urgency, introducing a mechanism for replacing those engines without losing accreditation.
- Policy and regulations such as Climate Change Levy, Building regulations, Future Homes Standard and Net Zero planning requirements, need to clearly recognise 'grid delivery' of renewable gas as a method to deliver renewable gas to CHP/DH schemes. BEIS needs to identify their preferred approach for grid delivery of renewable gas and set out the evidence and reporting requirements that CHP plants would be expected to follow. Grid delivery of renewable gas also be clearly identified as a method by which the gas can be delivered to CHP under the ETS. If these schemes can report that all or some of their gas use was biomethane and therefore zero emissions (1), this could provide a financial market-based incentive for biomethane production and potentially reduce the need for Government subsidies.
- Government should consider introducing a market incentive / obligation targeted at decarbonising CHP and district heating schemes
- Government must consider the opportunity to support a value and market development for carbon (ref BEIS document Updated Short-term Traded Carbon Values April 2019).

Endnotes

(1) Under current EU ETS guidance bioenergy is rated as zero emissions.

REA, 03/09/2020