Dear Mr Groome,

The Tipperary Energy Agency welcomes the opportunity to respond to the consultation on the RHI and we outline our views in the below text. As with all consultations, the Tipperary Energy Agency are content to have this response published in addition to being available to discuss our submission.

In advance of the response to the questions below, the Tipperary Energy Agency would have a number of general considerations.

- There is no provision here or in another state support for the utilisation of waste heat as a potential source of green house gas emissions reduction. While this consultation is focussed on the utilisation of renewable heat, a consideration could be given to the elaboration of a Waste Heat incentive (WHI) as a mechanism to reduce the use of fossil fuels and decrease carbon emissions.

- In the 2015 White paper on energy, the State policy clearly wishes to involve the citizen in the transition to a low carbon energy future. While it is clear that it may be more cost effective to install RES-H in larger buildings, the levying of taxes to fund the RHI on citizens without the potential of those citizens to benefit from the scheme is counter to the stated white paper objectives. The Tipperary Energy Agency would wish to state here that the role out of low carbon heating must include citizens and their homes or the state will likely generate negative citizen reaction to this support.

- While the RHI may be targeted, based on previous consultation papers, currently at larger customers, it should be directed to smaller installations, particularly for the utilisation of heat pumps for small to medium commercial buildings. This will move the heat from the non-ETS to the ETS sector and remove the carbon emissions from the state’s carbon balance sheet.

- There is clear evidence, European heat road map. Our own 2015 white paper, of the need for District Heating to aid the reduction in GHG from heat, and increase the % of renewable energy. The RHI presents an opportunity to incentivise the construction of 4th generation district heating utilising renewable heat (and potentially waste heat). The Tipperary Energy agency and other Irish partners in the EU funded Smart RE-flex project have made submissions in the past on the potential of District heating to aid our climate and energy objectives. This could be in the form of a top-up payment that recognises the additional cost (1.5c/kWh-2.5c/kWh) for the construction and repayment of district heating. In Denmark there is 1.2Million m2 of solar District heating providing almost 500GWh of truly zero carbon heat at a lifecycle cost of 3.5-4c/kWh for best new entrant plants. In combination, waste heat, solar heat, and biomass/ gas from agri-residues and post-consumer organic wastes can contribute significant GHG reductions.

- There is clear evidence emerging of the negative impact of some imported biomass to the EU that is in fact releasing as much GHG as conventional fossil fuels. The recent Chatham house report1 "Woody Biomass for power and heat" makes it clear that the supply chain GHG impacts need to be fully calculated in order to ascertain the potential for GHG mitigation and it clearly states that “sustainability criteria can ensure that only biomass with the lowest impact on the climate are

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1 https://www.chathamhouse.org/publication/impacts-demand-woody-biomass-power-and-heat-climate-and-forests#sthash.k1UliZ52.dpuf
In Response to the specific questions the department has asked in the consultation:

1. ETS or Non ETS
   It is the position of the TEA that the RHI should focus on the Non-ETS sector for a number of reasons:
   - There is a significant review underway of the ETS and it is felt that this will incentivise that sector into the future on an EU wide basis.
   - In addition, the fact that the ETS is EU wide, the addition of low carbon tech into the ETS reducing CO2 in an Irish site could have the potential to facilitate the increased emissions in another EU site. We also feel that the CO2 fines facing the exchequer post 2020, focussed on the non ETS sector should be an additional core driver for reducing the Non ETS CO2 emissions in addition to the 2020 RES-H target.
   - The incentivisation of heat pumps as part of the RHI will also move heat fully into the ETS and will in fact have an additional benefit of increasing the ETS sector, with its fixed cap should in fact increase the ETS price, and thereby incentivise reduction in CO2.
   - Finally, with respect to the putting the energy citizen at the core of Irish energy policy, the energy citizen is most likely served through facilitation of the non ETS and smaller facilities rather than that of the larger ETS facilities (not withstanding a number of them are in fact state/ citizen owned).

2. The Tipperary Energy Agency notes the significant damage to the industry that has been done in announcing a scheme in 2014, with significant rumours in 2013, and the likely hood of real commencement in early 2018. This policy announcement with significant delay has all but stopped any investment in the non etc bio-energy market. It is critical that a rapid uptake and grandfathering is secured from the date of tariff announcement.
3. The Tipperary Energy Agency strongly agrees that any heat incentive should be based on an efficient use of energy. The lessons from other jurisdictions are noted.
   a. A non-domestic BER would be a suitable transparent method for most buildings. However it is important that this criterion is tested on a number of cases and a derogation method is utilised using a registered energy auditor’s energy audit to identify any cost effective investment.
   b. While the Tipperary Energy Agency certainly agree with Energy Efficiency first, there is a limit to which that mantra should be applied. If the energy efficiency cost is significantly more (in Life cycle basis) and results in the whole project becoming un-economical, it is likely that an otherwise potentially sensible project would be excluded. We therefore suggest that criteria are based around the potential of the energy efficiency investment to repay as part of the overall assessment of minimum performance standards.
   c. Criteria of a non-Negative IRR (20 years) on Energy efficiency improvements is suggested (correlating to a 20 year payback).
   d. In addition a number of default limits for investment should also be considered as guidance – e.g. the restriction on the use of single glazed windows in non-listed buildings etc. should be replaced in advance of (or within the investment) any RHI support.
   e. A derogation for traditional or heritage buildings where the building is listed should be included on the energy performance criteria.
   f. For non-building loads or process heating loads, where a non-domestic BER is not an appropriate, an REA assessment of the potential of reducing heat use within the above investment criteria, should be outlined as a method to ensure efficiency is improved. While the Exceed program could be utilised, there is little market awareness, market capacity or impact of Exceed. The Tipperary Energy Agency delivers exceed consultancy, however we feel that its inclusion would be too restrictive in advance of its general uptake. The utilisation of a qualified and registered REA, who’s report is subject to review and audit (in a similar way to the EEOS), would allow the more rapid uptake of investment and would allow flexibility for the emergence of appropriate guidance and market norms to develop.

4. The Tipperary Energy agency agree that minimum technical requirements should be used, there are another few points of note:
   a. These could be complimentary to the Triple-E register (to reduce the burden of administration), allowing an ACA or public sector accreditation of the investment without having to un-duly engage with the difference between technology providers.
   b. The specification and design of any systems should be of a high standard (using appropriate standards and registered professionals of these design standards. This design should be preceded by an energy audit of the building and an appropriate heat load assessment.
   c. Standard / statutory commissioning requirements of the above standards would also improve performance where the commissioning is supervised by a registered third party to set criteria, and appropriate professional accountability ensured.

5. The Goal of the scheme is to increase renewable heat use and decrease fossil fuel use to reduce carbon emissions. It is therefore the position of the Tipperary Energy Agency that heat that is used should displace fossil fuel heat.
   a. No heat should be paid for where the heat is “invented” for the harvesting of subsidies.
b. Appropriate allowances in RHI tariff levels for AD digester heating should be made to reflect the reduced exported heat. This will encourage the most efficient use of heat.

c. The cost of biomass drying should be covered in the RHI for the use of biomass, not for the process of accelerated drying.

d. It is the position of the Tipperary Energy Agency, with the exception of district heating, that no new buildings should attract RHI subsidies, it is our position that the use of fossil fuel boilers should not be allowed in new buildings, other than as a backup of less than 10% of annual heat demand.

6. The WFQA should be utilised for the purposes of fuel quality assurance. The Tipperary Energy Agency would also note that it would be appropriate for the state to further support the roll out of the WFQA, underwriting the development and registration of the WFQA for a number of years before a fully funded WFQA from registrations can persist. This should include a significant focus on market development and “handholding” of the emerging fuel suppliers market.

7. Tipperary energy agency suggests a strong air quality focus on installations, with a clear regulatory regime and an appropriate knowledge and mentoring support for the industry to meet the criteria.

a. Technology criteria – via an approved appliance list should be considered in addition to the below. This should be based on EN test certificates and should be reasonably straightforward to not un-duly slow down the market place.

b. A testing regime should persist, mandatory independent for larger installations and more cost effective for smaller installations in order to generate an emissions certificate.

c. A qualification / registration of installers are seen as appropriate method to ensure installer compliance.
8. The Tipperary Energy Agency strongly supports the regulation of the overall life cycle GHG reduction. A scheme that results in the clear felling of mature forestry solely for energy use, thereby unlocking all the CO2 sequestered by that forestry is inappropriate. However there is a clear case for the co-production of forestry products (sequestering the CO2) and some energy production is appropriate.

a. The current EU and UK sustainability criteria are insufficient to ensure the appropriate accounting of GHG as part of the overall life cycle use.

b. The provision of financial or regulatory support to biomass energy on the grounds of its contribution to mitigating climate change should be limited only to those feedstocks that reduce carbon emissions over the short term. In practice, this means that support should be restricted to sawmill residues, together with post-consumer waste. Burning slower-decaying forest residues or whole trees means that carbon emissions stay higher for decades than if fossil fuels had been used. There is potential of short rotation crops etc. to be ultimately near zero carbon over the short term.

c. As Searchinger et al (2009) and many others have made now clear in the science literature, the EU has been employing deeply flawed accounting for biomass imports, particularly those from nations such as the USA and Canada that are outside the Kyoto Protocol. Counting bioenergy as zero emissions while ignoring uncounted land-use emissions and worsening forest management of the biomass is certainly false accounting not to mention immoral regarding climate justice (a concept that is part of our Climate Act). The IPCC have just proposed accounting rules that will prevent such miscouting in their and the UNFCCC’s future reporting, and Ireland should consider this in the context of this support scheme.

d. A peer reviewed study published by Mitchell et al (2012) in the journal of global change biology looked at the potential of woody bioenergy to reduce carbon and concluded:

i. “The take-home message of our study is that managing forests for maximal carbon storage can yield appreciable, and highly predictable, carbon mitigation benefits within the coming century,”

ii. “Harvesting forests for bioenergy production would require such a long time scale to yield net benefits that it is unlikely to be an effective avenue for climate-change mitigation.”

iii. “In most cases, it would take more than 100 years for the amount of energy substituted to equal the amount of carbon storage achieved if we just let the forests grow and not harvest them at all,” he said.

e. Any Biogas production must take into account:

i. The Nitrogen release from fertiliser production and use

ii. The fugitive emissions from the plant

iii. The transport energy use top bring feedstocks to the plant and residues from the plant.

f. There is a large potential of AD to produce low carbon gas, but only if the plant uses the correct feedstocks and is managed in the correct manner.

g. The utilisation of a clear GHG reduction target for RHI governance is appropriate that takes into account all life cycle GHGs.
h. A clear transparent methodology of calculation published could be seen as useful to ensure comparisons are appropriate.

i. The publishing of this GHG analysis from individual projects on the RHI web platform for open access should be considered, thus allowing third parties, academic institutions and others to appropriately assess where they feel potential projects have not been sufficiently transparent.

j. A process of updating the guidelines should be considered, where new entrants may have to increase sustainability performance on the basis of emerging knowledge.

In summary, the Tipperary Energy Agency suggests that careful consideration to the full life cycle GHG reduction is considered for all potential sources of heat and consideration given for support to technologies that actively reduce GHG by a significant amount. I.e. Solar, heat pumps, waste heat and correctly managed bioenergy.

9. The Tipperary energy Agency agrees that tariffs should be technology specific. We do however suggest that the tariffs should reflect the wider socioeconomic benefits and not just the costs to the hosting organisation. E.g. Where a technology exhibits high GHG reduction potential, low externality cost, high societal benefit in terms of jobs, domestic GDP etc, it should be considered on a higher scale as technology that does not exhibit other societal benefits.

a. The Tipperary energy Agency agrees that tariffs should be tiered on use not banded on size. An appropriate heat load assessment should also be considered as mandatory to ensure appropriate sizing of installations as referenced in section 3.

10. The Tipperary Energy Agency agrees with the departments approach, and considers the assessment of age of fossil technology not appropriate (other than to say a very old boiler that will be used as backup should be replaced as a matter of good practice).

11. A period of 15 years is quite significantly long in terms of the timeframe that businesses typically invest in technology. The TEA feel that this will result in low uptake of technologies in the multinational and SME sectors and will be confined to public, utility or very well established long term commercial operations. We feel that a lower period on not less than the median life of the technology, of 7.5-10 years, should be considered. A claw-back clause or final payment after a further 3-5 years could be appropriate to encourage longer use of the technology.

12. Profile of payments. It is likely that many of the RHI installations will be financed through on balance or off balance sheet financial mechanisms. With this in mind, some form of front loading over the first 3-5 years is preferable, where the top up revenue could be surrender to the financial institution for decreasing risk, therefore cost of finance, therefore uptake of the scheme. Cognisance of this appears to be missing from the consultation, and some engagement with the asset financing institutions could be appropriate. A suggested 2:1 payment where double payments persist for first 2-3 years would be appropriate. This would allow for the early installations dropping off before later installations going live, notwithstanding some impact on the exchequer.

13. Metering. The Tipperary Energy Agency meters domestic installations to ensure robust performance and we would strongly suggest same for RHI. Not only does metering allow administration and verification, it also allows for robust performance evaluations (fuel in Vs heat out). The application for RHI should include a maximum heat use based on existing energy use &
climate correction (or CIBSE / BER guidance) to prevent over payment. It should also consider the use of power metering for heat pumps and a minimum coefficient of performance paid for only. I.e. if it drops below 2.8, a penalty will be applied. Metering should be applied to the supported technology before the addition of the counterfactual technology, which is common in our installations.

14. The Tipperary Energy Agency agrees with the approach of the department on adjustments to tariffs.

15. As with all changes to incentive schemes, the clarity of the return of the schemes is appropriate to be maintained. If the approach proposed results in large decreases in the RHI tariff or a significant amount of stop-start, it will be challenging for the market to maintain satisfaction levels. The approach of the department appears to be sensible in so far as protecting the exchequer. An appropriate communication / register should be maintained to ensure that people know what the likely tariffs will be if there is sufficient demand (triggered by a fossil price rise!)

16. The target of an IRR seems appropriate to incentivise the uptake. The Tipperary Energy Agency suggests that a stable review mechanism be included as a matter of course. We propose that the scheme administrator should publish the price to be applied effective a minimum of 12 months into the future, if not 18 months. This would allow some confidence in the review mechanism.

17. The Sustainable Energy Authority is ideally suited to be the administering body. Appropriate resources should be provided for long in advance of the commencement of the scheme such that there can be a period of upskilling in line with the development.

18. Pre accreditation should be available for all participants. The Tipperary Energy Agency has worked on a number of projects with project hosts that will have little knowledge of the Renewable heat industry, it is absolutely necessary for a binding pre-accreditation in advance of the investment being made. This would be relatively simple to complete and would support the roll out of the Renewable heat incentive.

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