

Work Package 4 - Domestic Hydrogen Appliances Q&A and discussion summary

How will the results of the Hy4Heat programme be shared and publicised?

We will be providing general updates to stakeholders for the duration of the programme. However we appreciate that there will be elements of confidentiality that need to be considered within certain work packages. As a publicly funded programme Hy4Heat will share the final output of the work package as much as possible, but the level of detail this contains is still to be determined. Collaboration and sharing between manufacturers, as would be normal industry practice, is encouraged however it is up to individual companies and organisations to do this as they see fit.

Is the overall objective of WP4 is to have appliances ready for the community trial? Are the appliances used in the community trial expected to be more mature than those developed for the prototype unoccupied trial?

We would like the domestic hydrogen appliances used in the unoccupied trials to be as technically developed as possible by the time of the trials. The decision to move to a community trial is one that BEIS has yet to take and is outside of the Hy4Heat programme. All the evidence gained from the Hy4Heat programme supports BEIS decision-making. There would likely be approximately a year between the end of the unoccupied trials and any potential community trial and appliance development could continue during this period.

How does the Hy4Heat programme link to Mission Innovation?

The Mission Innovation initiative is focused on international collaborative research and development and provides another platform for companies and organisations to share and innovate. It is more focused on R&D at the higher strategic level of the Hydrogen Economy, of which Hy4Heat is a part. Separately though there is also significant interest in Hy4Heat across gas-using nations globally. And there is also now a team within BEIS looking specifically at the wider Hydrogen Economy.

How were the requirements for appliances conceived?

We proposed 'like-for-like' appliances to remain as similar as possible with what the end user / consumer is familiar with today. However, using a PCP approach allows us to be flexible as we gain more insight as the programme progresses. We welcome evidence of sales figures (for example) for appliance types not currently being considered – as this may inform how the appliance categories are described. The 'executive fire' category has been added as an opportunity to inspire the transition to hydrogen, providing an aesthetic focal point, potentially exploiting the intrinsic nature of hydrogen in ways that are not possible with natural gas, as well as warming the room.

How was the proposed budget for local space heaters (gas fires) arrived at?

This takes into account the information in a recent report by Fraser Nash and splits it across the different phases. We used these figures to start the discussion as they are publically accessible and have been researched to some extent. We want to start a discussion with the industry about how this breaks down across appliances and phases and welcome any market/sales information and evidence about likely costs to assist decision making and consideration of how the funds are allocated.

How will the phasing (funding / timescales) be managed?

Essentially the PCP process is a competition. We are keen to support as many ideas /solutions as we can within the budget has been allocated to the work package. However, depending on the idea's merit (quality and cost) only some bids will progress through all the phases.

What level of detail is required at Phase 1 of the product development?

This is still being established. Hy4Heat is interested in understanding the appliance development stages in conjunction with the industry. We appreciate an appliance may not be available at this stage. The details will be defined in the ITT.

How do you progress through the phases?

Organisations can only enter the competition at the first phase. Progression to the next stage of the competition is dependent on their performance in the previous stage. The evaluation criteria for each stage will be defined in the ITT.

Does PCP set any limits on the percentage the Government can provide for R&D – is there a risk of noncompliance ref state aid?

PCP is compliant with EU public procurement rules (i.e. because it is an open and free competition, etc). Tenders will be asked to indicate two prices when bidding:

- One if IPR would be retained by the contracting authority (i.e. BEIS)
- One if the bidder retains IP

By providing two prices the bidder puts an estimated market price on the resulting IPR – thereby the risk of noncompliance with EU competition rules are reduced

Who can be involved in Work Package 4?

There are no restrictions on what types of organisations can be involved and ideas submitted. There are no restrictions on individuals, organisations or consortiums collaborating with multiple parties and submitting multiple bids. However, there should be one lead organisation, who accepts the contract, and they must remain the lead throughout the delivery of the work package.

The bidder needs to be capable of delivering an appliance as an outcome of this workstream and will own all elements of the process (e.g. testing)

Will any information be provided prior to the Invitation to Tender?

Prior to the ITT we intend to hold a webinar to provide the details of the competition. Once the ITT has been released there will be a window for clarification questions to be asked, as per the standard process.

Does the successful organisation / group need to be UK based?

No, the organisation does not need to be UK-based. However, the location of the demonstrations / unoccupied trials must be in the UK.

What standards will be used to deliver certified appliances?

Guidance on the standards to be used to certify the appliances is provided in the functional specifications for each appliance type. The process for certification will remain the same as for natural gas appliances and as part of work packages 2 and 3, guidance will be forthcoming on how the existing standards will be amended to incorporate the use of hydrogen. As a general guide, appliances will need to be certified as safe for the demonstration trial. For any subsequent community trial, emissions levels will need to be similar to those achieved by natural gas-fuelled appliances.

What NOx levels need to be met?

See answer above

What quality of hydrogen will be used – will this change (as a result of WP2) ?

The starting point for WP2 is ISO14687, Grade A, Type 1 hydrogen, plus the standard concentration of the existing odorant and with the potential for including a colourant. Depending on the appliance, manufacturers should consider the need to add colour to the flame at the appliance level as well. WP2 will develop a new hydrogen standard, based on the starting assumptions, but it is not envisaged that the quality of the gas used in the unoccupied demonstration trial will differ significantly from these starting assumptions.

Regarding testing facilities – who pays for this?

It's expected that the cost of testing is borne by the bidder and the bid reflects the estimated costs of this.

What about access to testing facilities?

It's expected that bidders make practical arrangements wherever possible to conduct testing. However we appreciate this may be challenging and are considering ways to support suppliers to do this.

Will Kiwa, as part of the Arup+ PMC team, be able to fulfil its role as a Notified Body

While members of the Arup+ team are not allowed to bid for competed elements of the Hy4Heat programme, Kiwa Gastec may continue to perform its role as a Notified Body for appliance manufacturers who are bidding for Work Package 4.