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| Network Innovation Competition 2020 Supplementary Answer form | | |

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| Project Name | H100 Fife | | |
| Question number | #23 | Pro forma section | 6 |
| Question date | 10/09/20 | Answer date | 14/09/20 |
| Question summary | There seems to be a contradiction between stating the project will provide more evidence on the safety case while shortly thereafter rolling out to occupied houses. In comparison, H21 develops unoccupied micro-grids. Is that not a more logical next step to develop the hydrogen evidence base prior to further roll out? | | |

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## Answer (please retain document formatting and do not exceed 2 pages unless otherwise agreed with Ofgem)

H100 Fife seeks to deliver a safe trial, not a trial for safety. The assessment of safety is based on ALARP approach. In preparation for the project we have undertaken comprehensive steps towards this. Aspects of the project, such as the electrolyser, coupled with the conclusions from the Hy4heat downstream risk assessment will continue to inform the overarching QRA until such time as the design is finalised.

For future conversion of networks it is required to demonstrate that the risk is the same or lower than the current system. The H100 Fife project will deliver critical learning on the real live operation. A safe network trial and suitability of conversion is not solely down to the integrity of assets, rather critical insight is required into security of supply, consumer acceptance and real-world operation. With regard to microgrids proposed under H21 2b, a benefit of building the facility at Spadeadam is that it can also be used for testing and for training operatives through unoccupied pipework and in-home trials when paired with Hystreet. The controlled nature of the site is conducive to testing of materials, components and operational processes, in determining intervention requirements on the existing assets.

This can include testing of fusion to existing pipework of varying age collected under the asset collection phase, or new methods of purging, such as direct from natural gas to hydrogen.

Nationally, operational hydrogen experience is limited to industrial applications; there is

no experience on gas distribution networks supplying hydrogen to homes at present.

It is therefore essential to undertake a safe end to end trial to provide confidence prior to moving to conversion trials for our customers, Duty Holders and HSE. The integrated hydrogen trial (IHT) programme has been developed under the Hydrogen Programme development group.