

Minutes of the Climate Emergency Taskforce
28 February 2023 (6.00pm – 9.00pm)

Present: Cllr Louise Gittins (Chair), Cllr Matt Bryan (virtual), Cllr Paul Bowers, Cllr Jill Houlbrook, Cllr Gillian Edwards (virtual), Cllr Simon Eardley, Niall MacFadyen, Steve Hughes, Cllr Christine Warner, Andrew Lewis, Kerry Hall.

Apologies: Cllr Gina Lewis, Cllr Robert Cernik, Mark Thompson, Cllr Karen Shore, Ashley Rogers, Phil McCabe, Charlotte Harris, Jane Gaston, Bernadette Bailey, Jennifer Kelly.

1 Welcome and introductions

Cllr Louise Gittins welcomed all attendees to the meeting, and outlined that the meeting related to the Whitby Hydrogen Village proposal. Cllr Gittins noted her disappointment that Government had not attended the meeting, and said that a statement had been received which could be read out.

Cllr Gittins set out that the purpose of the meeting was to gather the views of residents and stakeholders, and provide these to Government to consider in their deliberations via a formal letter. The Climate Taskforce was designed as a cross-party forum to support the Council's response to the Climate Emergency declaration.

Cllr Gittins noted the attendance of the members of the Climate Taskforce.

Cllr Gittins outlined the ground rules for the meeting, requesting all attendees allow each other to be heard.

Cllr Gittins set out that Whitby residents had been prioritised as public speakers, and asked that questions were focused on the specifics of the Whitby Hydrogen Village proposal. She said that attendees could sign up for the regular newsletter to be kept updated on the local climate response.

Cllr Gittins described that the Council was not the decision maker but had organised the session to invite submissions of public evidence to be made to the Climate Taskforce. She said that the purpose of the meeting was to ensure the Council's recommendations were informed by resident views and expert views from all sides of the debate.

Cllr Gittins thanked the speakers, thanked the attendees and thanked those participating on the webcast.

Cllr Gittins set out the structure of the session, and that there were two parts to the meeting, the first, for 40 minutes, dedicated to public speakers, and the second for an expert panel discussion.

2 Public Questions

Cllr Gittins called Karen Cross to provide her evidence.

Karen Cross provided the following evidence:

“Good evening, everyone. Article 8 of the UK human rights act 1998 states that everyone has the right to respect of their private and family life and their home. Also, there shall be no interference by a public authority with the exercise of this right, except for things like national security, public safety, prevention of disorder or crime. Experimenting on human subjects is not one of these defined exceptions. The only reason why we are here tonight is because some residents have pushed against the one-sided, Cadent information machine. And demanded a full range of evidence and opinion to help us make our decision. Cadent would never have willingly done this. The energy bill currently going through Parliament requires that Cadent must design the trial to protect consumers and other people who are affected. There are four key things in this draft bill. Firstly, Cadent must give a route for complaints and concerns, treat us fairly, before during and after the trial. So what’s actually happened, After lobbying and discussions behind closed doors, in 2021 this Council handed over our homes and our lives on a plate to Cadent. Without consulting us. How dare you. Secondly, Cadent must provide information to consumers and others. Instead, they continue to provide a one sided and erroneous propaganda. Stalling on answering legitimate concerns, refusing to provide independent expertise, and attacking independent experts. The citizens advice bureau has walked away. The market research was twisted. They have deliberately side-lined the parents of the children and in primary schools. Thirdly Cadent must ensure that consumers do not incur any expense or be financially disadvantaged. Instead the offer has changed over time, is still only provisional, no firm assurances on costs of hydrogen or electricity during or after the trial. There is no information on the impact on house insurance or house prices. Lastly they must make provision for enforcement requirements. Are they expecting to use force? I think they know that this is not a voluntary arrangements. Our choice is between a rock and a hard place, and there is no option for us to completely opt out of the trial as it is currently formulated. They will use rights of access from the gas act to break into our houses without our consent, and we’ve seen that on TV. But finally tonight, on Friday, we got our vote. But if you say yes to this Hydrogen trial your life and your home will never be your own again. You hand over your rights to a huge corporation who are in a fight to the death to save their business from oblivion. Thank you”.

Cllr Gittins called Graham Hastings to provide his evidence.

Graham said “Good evening. Late last spring a leaflet was put through our door. Completely out of the blue, telling us that Cadent and the Council had chosen our

area as a possible site for an experimental hydrogen village. This would mean that Cadent would be able to withdraw our natural gas supply and replace it with 100% hydrogen. This was a surprise indeed, a shock, as an independent report commissioned by the Government had recently concluded that domestic use of hydrogen presented four times the explosive risk of natural gas. But for their own reasons Cadent were determined. Soon, two of their representatives were knocking on the door. When we mentioned the potential danger posed by Hydrogen in our home. They tried to be reassuring, their arguments about the lack of disruption were however difficult to accept as they were already digging up half the roads in the area, including ours. The potential disruption became even more evidence when we were told that some people may need to have their meter, pipework and even their boiler relocated. In addition, ventilators would need to be knocked into some walls. Because of these concerns we decided to book an assessment. We had had the boiler serviced by British gas the week before so there was time to ask questions. The two British gas engineers who attended our property during the assessment both called Cadent's trial "an experiment" and both agreed that we would be "guinea pigs". Strangely when we booked the assessment we were informed that the decision maker in the household should be present. Indeed the engineers had been given a form for us to sign on which we were asked our likely future plans. Now I like to think of myself as a decision maker in the household but unfortunately my wife doesn't agree. This became a real problem with Cadent's latest attempt to misrepresent opinion. After I completed the so-called independent online survey. My wife contacted Savanta for her own form, she was told that they had been instructed by Cadent to only issue one form per household, and that she could not have her say. Despite her protests, this remains the case. Trialling or experimenting, call it what you will, such a major disruptive change in an established, settled community before anywhere else is ill-conceived. I understand the need for carefully thought out and managed change, and this experiment is not the way forward. I urge this meeting to listen to the people of Whitby, stop this trial now, before Ellesmere Port becomes one big experiment."

Cllr Gittins called Kate Grannell to provide her evidence. Kate Grannell provided a recording, and said: "Since September I have been a vocal leader of our resident group, highlighting the issues, outstanding questions, the treatment of residents, with responses from Cadent is that we are uneducated and scaremongering, and I have even received responses from Council members calling me aggressive and unstable. This does not sound like residents are respected, let alone listened to. From day 1 the treatment of residents by all decision makers has been disgusting, neglectful and appalling. We've not been provided with any protective body to ensure we're treated fairly, properly informed or protected. The trial has been conducted on a divide and conquer approach. I requested that residents were provided with a public debate with independent experts with no financial involvement in the trial. This was not provided by Cadent, and has taken until now, 10 months after the trial went public, which is only happening because of our resident campaigning and protesting. This is unacceptable. Any information we

have has been independently sourced by our resident group. The consultation has digitally excluded a large majority of residents, with most information being online, on e-newsletters, webinars, or social media. Cadent have led a campaign of misinformation and failed to answer critical questions. Cadent have refused to provide measurements or success, exit plans or final offers. They have not clearly advised residents that to take part in the trial in any form means your access to gas will be removed, verbally dissuaded residents from alternatives and in many instances providing misinformation like "heat pumps won't work without underfloor heating or ripping house apart". These pressurised sales tactics using phrases like "we'll need to make this decision now", the bottom line is no environmental groups support the use of hydrogen in the home. Hydrogen will be more expensive, and less efficient than direct electrification. There are now 33 studies all stating that hydrogen in the home is a futile project. Hydrogen has been dismissed as any serious option by the Climate Change committee, and many other organisations and countries. How much more taxpayers money will we waste on a wild goose chase. We are glad that after 6 months of tireless campaigning that the Council and local MP are finally starting to listen, and have committed to holding an independent vote. However, considering that the Council endorsed and welcomed the trials to Whitby back in 2021, we feel very strongly that the vote should have been offered to residents a long time ago, and is only happening now due to the persistent hard work of our residents, who have been out daily holding resident meeting, webinars, leafleting, door knocking and speaking with independent experts. We've been left out of every decision so far, decisions that impact our homes, our lives and our families, so the Council and Local MP must also commit to us now that the resident group will be included and have a say in how the vote process is created. Thank you."

Cllr Gittins called Barbara Cobb, who did not choose to speak.

Cllr Gittins called Mark Holt, who said "Good evening, I would like to ask why our elected representatives chose to support this trial in the first place. I am particularly puzzled because a simple google search brings up independent experts such as Dr Jan Rosenow and of course Professor David Cebon, who we were hoping might have been with us this evening, who make it clear that the science, economics and ecology behind it mean that Hydrogen for heating is a non-starter. It's bad for the environment. So why is our public funding being used to subsidise the fossil fuel industry, and make no mistake, hydrogen is being promoted by the gas suppliers for their own benefit, not for ours. Therefore I call on our representatives to not only withdraw support for the trial, but to join us in actively campaigning against it, and call for substantial subsidies to insulate homes, electrify heating, and provide more solar and battery power instead of fossil fuels. Then we could actually pioneer a true green eco-village here in Whitby."

Cllr Gittins called John Roach, who said "Hello everyone. I'm John Roach, Whitby resident, lived on Woodland Road for 10 years now, and have been campaigning against this trial since August of last year. I want to say at the start I believe in a green future as much as anybody else in this room. I don't hug my boiler when I get home, but I also don't believe hydrogen is the future for home heating. When I

talk of “we” today I am taking the liberty of speaking on behalf of the 360 members of the Against Facebook group. The people who have supported us by putting posters in their windows all across the wards, the people who have phoned, and spoke to us on the doorstep to say that they also support our attempts to get this trial stopped. I’m grateful for the Council to organise this meeting, but it took 5 months of work by the residents group to push for this. Cadent would never have give us this meeting, the Council have, but 9 months into a consultation period, why was this meeting not held in month 1. And further meetings to take place after that. I’m grateful for the vote, very grateful for the vote, again, 5 months hard work pushing for this vote. Cadent don’t want us to have a vote, the Council have granted it. But it’s been a lot of hard work. And we are now just so close to the end of the consultation period, that this vote can’t possibly be held, and we can’t have a result that can be fed into Cadent’s final submission, and that’s a terrible shame, and shouldn’t have happened. We’ve got some concerns about the vote. We’re concerned about what the wording be on the ballot paper, how will the vote be administered, we know Cadent don’t want the vote, and we know the Council and Justin Madders want this trial to go ahead, so we feel we need to be involved in the way this vote is set up, and we believe there should be an independent voice, to oversee the vote. We want the vote to happen now. We don’t want to wait till later in the year, we feel that the later the result of this vote is, the less chance that it will have any sway on the decision of the government as to where this trial is. I should say, that over the past 8 weeks I’ve knocked on over 1000 doors in Whitby, and I know there is no strong support from this trial. There is strong opposition. The government have said for this trial to go ahead it needs strong resident support, we need to demonstrate that, we need to demonstrate that quickly. It just seems to me we should get this done. It’s clear that the residents don’t want it, and it just seems wrong that we have to continue to go forward with this when it’s not gonna fly.”

Cllr Gittins called Jimmy Shannon. He said “Greetings everybody, for those that don’t know me, my name is Jimmy Shannon, I’m the Labour party candidate for Whitby Groves. I’ve lived and worked in Ellesmere Port all my life, I’m a local community organiser, founder or Ellesmere Port wombles Litter picking group, but also one of the organisers behind Ellesmere Port’s enough is enough campaign. Anyway. Now I’ve spoken to hundreds of residents while our canvassing, some in favour of using hydrogen, some against, some that are not too bothered. We’ve all got to face some facts here, our children’s and grandchildren’s futures are at risk. We’re all aware our planet is warming up and we are responsible for it. We’ve got to find a way of at least meeting the net zero deadlines with the least detriment to our communities. Changes in how we live are vital. Since learning of the proposed hydrogen village last year, I understand that we’ve all been on a learning mission to make sure that we feel comfortable with our futures in our own homes. Speaking of risk, I’ve just mentioned our children and grandchildren’s future. I understand from some residents there are concerns the risk of using hydrogen to fuel their homes due to it being more combustibile. It’s concerns like these that we need to get solid, factual answers for here this evening. We need to get to the bottom of

the concerns on house prices, home insurance, and whether fuel bills are going to be affected. Particularly when we consider the cost of living crisis or the cost of greed crisis as I like to call it. I've also learned many different residents point of view on the use of hydrogen domestically, and the mistrust that has been gathering between our fellow residents and Cadent. This is what led me to push for this consultation and the public vote, saying this we must make it clear that a public vote will not be legally binding, but its' vital to inform the government what local residents views are to influence the decision. I hope we can move forward this evening and start to work together cohesively as we head towards our net zero deadline. Our children's futures are paramount and I hope we can get to where we need to be before its too late. Many thanks."

Cllr Gittins called Paul Carter. He said "I'd just like to say, I'd like to speak to the people...for the people who are actually impacted about this, they're the ones I want to speak to. Most people here don't live in the houses that we're speaking about. So I want to speak to all the friends and neighbours, who really matter in the situation. Regardless of what these people tell you tonight, we have the opportunity to stop this and I won't swear, it's all about financial things, it's not about residents and their own homes. The value of the homes and all the risks that we're taking on behalf of certain people who don't think we deserve our say. And we've fought, these guys, and all of us have fought tirelessly just for you to be listening to us now. This should have happened 8 months ago before you even put a village there. Cadent did the vans, it's an absolute disgrace. So let's put show in our hands, the government said if they haven't got the support of the residents it can't happen. So let's make sure it doesn't."

Cllr Gittins called on Gaynor Lyth, who did not choose to speak.

Cllr Gittins called on Peter Rooney. He said "Good evening and thank you for giving me the opportunity to speak this evening. I've been meeting with residents to discuss the impact of the trial since last November. I also sit on the residents group and meet monthly with Cadent. I've been involved in discussions with the Labour group, Justin Madders and Cadent and have attended meetings with the steering group. I've been involved with open days for information, I've listened to residents both for and against the trial. Those who oppose the trial have been very vocal, they have organised themselves well and they have campaigned hard to get their case heard. And they have been heard. However those that do wish to take part in the trial also deserve to have their voices heard. And I have listened to them as well. I have answered questions from them and given them access to information from alternative sources. Myself and my colleagues in the Labour group have listened to residents and have acted in response to genuine concerns and questions from both sides. We cannot stop this trial, but we can insist that certain conditions are met for our support. We have designed 5 tests, these are that a public vote must be held to test the actual support or rather opposition to the trial. Cost must be guaranteed for energy usage for both hydrogen and electric users. We insist that a new regulatory framework for hydrogen in the home is set

up by the health and safety executive. We want a commitment from Cadent that only green hydrogen made from renewable sources will be supplied to the homes taking part. And we want local businesses and tradespeople to be part of the installation teams and that skills training will be made available to local people. The speakers here tonight are experts in the field of hydrogen and heat pumps, and I hope that they will help you to make the right decision for your home, whether it be to choose hydrogen, or the electric alternative should the trial go ahead”.

Cllr Gittins set out that the public speaking time had now ended, and started the 10 minute comfort break.

3 Expert Panel:

3.1 Expert Introductions

- 4** Cllr Gittins described the format of the session; that experts would introduce themselves, and the meeting would then move on to a panel discussion.

Professor Gordon Andrews was the first expert speaker. Professor Andrews introduced himself as an independent expert on hydrogen safety, and hydrogen burner design for low NOX emissions, and a Professor of Combustion Engineering at Leeds University with 600 publications, and a partner with Clean Burner Systems in Hydrogen burner design for gas fires and industrial heat, under the Hy4heat and green whiskey distillery funding streams. He set out that some of the burner designs he had worked on with Clean Burner Systems would be used in the proposed village. Professor Andrews described the high proportion of UK emissions that come from home heating, and set out that he viewed a conversion to Hydrogen as the most appropriate and affordable method of decarbonising domestic heat. He conveyed his position that heat pumps were in unaffordable and a switch to electric would require a doubling of electricity which would need to be renewable, requiring a five-fold increase of renewable electricity production. He set out that Whitby residents had been subjected to an information campaign based on fake information. He recommended ignoring the literature produced as it is not written by experts in hydrogen safety, hydrogen practice or low NOX burner designs. He stated that hydrogen burners are safer than using natural gas due to the eliminated risk of CO poisoning. On explosion risk, he stated that this is the same as for natural gas, which was similar to the risk of being electrocuted, or struck by lightning, at one incident in a million homes. He called for residents to support the programme for their sake of their children and grandchildren.

Professor Tom Baxter was the next expert speaker. He set out that his background was over 40 years as a Chemical engineer, dealing with Oil and Gas. He combined this with a career as a lecturer at University, and that one of his topics was process safety. He discussed the principles of inherent safety of hazardous processes. He set out that his theme was safety, and that he felt differently to Professor Andrews, and that there was an understanding that we must stop burning gas. He set out

three choices, hydrogen, electrification and heat networks. He stated that the latter two completely eliminated the gas risk from a house, and that going for a heat network or heat pump route would be a safer option, and that this route also offered no NOX and no hazardous source in the house in case of a fire, which could escalate a fire. He proposed that electrification was a compelling option.

Mark Neller from Arup was the next speaker. He described that he leads Arup's energy business, a mechanical engineer by background and training, starting his career in gas distribution, with front-line experience. He then went to work for an electricity distribution company, helping to upgrade the electricity network. He joined Arup 16 years ago, working across both electricity and gas transmission networks. Arup was described as being an employee owned business that holds its independence dear, and one which had sustainability as a corporate priority. Domestic heat was set out as a priority, and noted that he had teams working on a range of initiatives. Mark noted that there were a range of things that were needed to solve the issue of heat decarbonisation, engineering, an effective delivery roadmap, fair funding, and it needs to be a fair and just transition, taking into account the views of people and consumers, creating jobs and economic value.

Tom Collins of Worcester Bosch was the next speaker. He said that Bosch's profits go to a charitable foundation and the intention is to improve lives through technology. He outlined his background in mechanical engineering. Tom set out the challenges of decarbonising heat, and the efforts that Bosch had made to introduce heat pumps, but that boilers remained the most common heating solution sold. Tom has led the Bosch team developing hydrogen boilers for 7 years, and set out that Bosch prioritised developing and ensuring safety to engineer risks out of the boilers at a fundamental level. He set out that the safety testing had been done at a deep level and said he was struck by the word experiment, and stated that from the view of appliances, this is not an experiment for safety, and that this was about how homes are decarbonised.

Cllr Gittins read out a statement from Government. This statement is attached as Appendix 1.

Professor David Cebon was the next speaker. David commented to agree with Gordon Andrews that we would need to double the amount of electricity to do heat pumps, however stated that green hydrogen would need a twelve-fold increase, due to the inefficiency of Hydrogen processes, and the much higher efficiency of heat pumps – 300% efficiency. David stated that the electricity required for green hydrogen would be 385GW of new offshore wind capacity, in the context of 11 GW of current onshore wind capacity, a 35x increase. David stated that this was not going to happen, and the fossil fuel industry knows this was not practical, and that this would use all of the electricity required for the transition in the wider economy. He questioned why they were proposing this solution, and he conveyed that grey hydrogen would be used rather than green hydrogen. David referred to the cost increases resultant from increases in green electricity used for green hydrogen

production, and that this would require government subsidies which would be an inappropriate approach for the UK economy. He conveyed that there was no evidence to support Hydrogen for heating, that the House of Lords, Chris Skidmore, 33 independent records reviewed by Jan Rosenow concluded that domestic hydrogen for heating was not the right course of action.

Michael Liebreich was the next expert speaker. Michael set out that he was an independent expert with a background in engineering, thermodynamics, business, visiting professor at Imperial. Michael agreed that Hydrogen in the home could be made as safe as natural gas, though he noted that this was not safe. It would produce nitrous oxides (causing childhood asthma), and that this trial was pointless in proving whether hydrogen is the most cost effective way of heating homes. Michael stated that independent analysis says that Hydrogen plays little or no role. Michael said this proposal was intended to maintain debate, discussion and delay, as gas networks wanted to continue to harvest profits from the gas network until 2068. He set out that the quicker the progress towards electrification and heat networks, the quicker we would be able to progress on decarbonisation across sectors for the benefit of our children and grandchildren.

Dr Angela Needle from Cadent was the next expert speaker. She thanked people for attending and thanked those that had shared their views. Angie noted her disappointment that Government were not in attendance, and the need to look at all solutions to get to net zero. She disagreed with some of the points raised; if they were just looking at gas networks, they would not be looking at hydrogen, recognising the need to switch away from natural gas. Angie noted that there would be areas that no longer need a gas network; this could be one of them. And it was described that the Climate Change Committee and others saw some role for hydrogen, noting that only 7 studies of the 33 were from the UK. It was described that half of them note some role for hydrogen, therefore this was not an either or, it was a bit of both that would be required. She set out that some of the studies noted a requirement for hydrogen as part of the future energy system. Angie questioned the maths of Professor Cebon, arguing that the UK spent £1bn last year paying to stop wind turbines, expected to be £5bn by 2030. She set out that this was about repurposing infrastructure, and that if people did not want it, the gas network would be decommissioned, and therefore this was about enabling people to share their views and have a choice in their future heating options. Angie encouraged people to talk to Cadent and thanked attendees.

The next expert speaker was Andrew Lewis, Chief Executive of the Council. He thanked attendees for coming, and set out the approach the Council took. The approach taken was framed about the declaration of a climate emergency, with every Councillor unanimously supporting a programme of action on climate change. He described that pumping fossil fuels into our homes to heat them was not a sustainable future, and that there was a national and international debate about the mix of technologies required to make this transition. Andrew outlined that the proposal was introduced by Government as a competition, in order to

determine whether it would be possible to create a public debate on whether it would be possible to transition to hydrogen in a place like Whitby, and whether the stakeholders could engage local residents in a constructive way and look at the issue of whether a pilot is possible. He set out that the Council entered this with a positive frame of mind, given Ellesmere Port's potential as a global centre for Hydrogen. Andrew noted that the Council had made some points from an early stage to Government; that it was a mistake to run this as a competition between gas networks, and that the Council would have rather had a much stronger partnership approach between local and central government. He noted that the area is being considered alongside Redcar, and that the Council had reached out to Redcar on this shared issue. He set out that the Council had confidentiality requirements imposed upon it by Government, that this was totally inappropriate, that the Council has pushed for greater openness throughout, and that there has been an absolute commitment by the Council to safety, with this being validated by the HSE. Andrew set out that the Council had been clear that there should be no financial detriment to individuals, including beyond the pilot, if it were to take place. Andrew addressed the question of resident voice, and assured residents that this whole principle, of local consent, has been at the forefront of everything the Council has conveyed to Government from the start. He noted that the Council had sought assurance on the data gathering exercise, to make sure that any data is validated and audited. He set out that the Council had looked at a public vote, which had come strongly through from residents, and that the Council was happy to accommodate that. Andrew noted his role as Returning Officer, running elections within the area, and that the Council runs a variety of elections. He set out that the Council had agreed to hold a poll which expresses the views of residents; and that this would be before any decision is taken by Government. Andrew said he had heard the request from residents to input on the question that is asked and agreed to consult on how the poll is conducted. He reiterated the Council's view; an absolute commitment to safety, that the Council's view is dependent on resident buy-in, and that residents views will be objectively assessed and presented to Government as part of their decision making process.

5 Question and Answer/Panel Discussion Session

Cllr Louise Gittins read out a statement from Norah Hunt, which said "We all don't agree with it. Its dangerous. Everybody does not want your hydrogen village in our community. I hope it doesn't go ahead for all our sakes."

The next question was from David Plunkett, which said "The Industrial Revolution started here with water power from mills and turbines, so why does CWAC and the University of Chester support the continuing combustion of fossil fuels by the companies behind HYNET for "blue" hydrogen and their unproven non-existent CCS technology, when Cheshire has estuaries and a coastline that could and should be developing proven tidal and turbine energy to create energy and clean emission free "green" hydrogen, because continuing to support HYNET delays and blocks development into the renewable energy we need to get to Net Zero."

Cllr Gittins noted that this was a question relating to HyNet, and that this was an important debate for a different day.

Cllr Gittins took a question from the web “I have a 4 year old boiler with a purchased 10 year full warranty parts/labour. Will this warranty be covered like for like and will service costs be the same ?”

Angie Needle addressed the question, answering that boilers will be fitted with a full 10 year warranty and all service included, paid for by the project, and that Cadent are looking at if a new appliance is replaced (installed within the last 3 years), that some financial benefit is provided for this.

Cllr Gittins read a question from Diane Pendlebury, “I am very worried about the cost to us after the 2 year period. I feel would should have a guarantee that it will cost no more than gas.”

Angie Needle addressed the question, stating that the plan was that after the project, those who had hydrogen would convert back to natural gas. She said that Cadent have been trying to clarify with Government about their long term strategy, on whether there will be a long term subsidy and protection on cost, and that without this confirmation from government, the position was that households would switch back to natural gas.

Michael Liebreich discussed costs beyond the trial period, noting that clean hydrogen would cost between 2-5 times as much per unit of natural gas. He discussed that during the trial, protection could be provided, but those 2-5x costs for hydrogen would remain. He also noted that if residents went with a heat pump, they would have this for between 15-25 years, potentially far ahead of when they would otherwise have switched to heat pumps. He said there was no clarity about heat pump price protections in the long term, and that he felt that protections should apply for the long term.

Cllr Gittins asked a question, “If we are all going to do this, how are we going to pay for it as individuals”, and noted that she enjoyed cooking on gas. Michael Liebreich discussed that the cost was the primary issue rather than safety – and that this could be paid as individuals or taxpayers at a nationwide level. Michael went on to say that he disagreed with Angie Needle’s point regarding curtailment of renewable energy, and discussed that if hydrogen was to be used as storage, that it was not necessary to use this in people’s homes.

Mark Neller contributed to the debate, discussing Chris Skidmore’s report, and that one of the 129 recommendations was that we do not know enough about the comparative costs of heat pumps and hydrogen, and that this should be addressed as swiftly as possible. He discussed that there was a lack of clarity on modelling that is used to inform the recommendations of the CCC. Mark discussed the impact of consumer choice, and described that the model used cannot inform us

on the true impacts of e.g. 80% heat pump adoption, as the model assumes that the electricity distribution network has infinite capacity. He outlined that this was why Chris Skidmore recommended that a full 'bottom up' review of costs was undertaken.

Cllr Gittins read out a question, "I have concerns about the safety of hydrogen in the home environment. It is highly flammable and corrosive to metals, so what is the longer term effect on home gas devices?"

Professor Gordon Andrews addressed the question. He discussed that the Hy4Heat safety programme had reviewed these questions. He outlined that major incidents result from large holes in transfer lines, and that this could be mitigated by the installation of excess flow control valves, which are already fitted to gas. He set out that provided this technology is fitted, the risk of a hydrogen explosion is no different than the risk of a natural gas explosion. Gordon discussed that the pipes in the area were polyethylene, and that the issue of hydrogen diffusion through metal not significant when tested.

Mark Neller contributed, stating that his project team was the one that delivered Hy4Heat. He discussed that Arup commissioned on behalf of Government a series of work that looked at putting fittings together like those in people's homes, and the conclusions were that if the copper work does not leak with methane, it will not leak with hydrogen either, and these were proven by hundreds of experiments in the lab.

Tom Baxter came in to comment on the Arup QRA. He said that even with excess flow valves, you are three times as likely to have an explosion.

Mark Neller stated that the task set by Government was to demonstrate whether or not hydrogen could be as safe as natural gas in the home. Mark described the risk assessment process taken. This included looking at the likelihood of combustion, and that given hydrogen's different characteristics to natural gas, it was understandable that it needed different safety measures. He set out that the conclusions were that with two excess flow valves in place, the larger explosions which are more likely to cause injury or fatality were reduced in likelihood. He described that these were not unproven devices. Mark set out that the Precis of the work undertaken was designed for events such as this, and set out that the Health and Safety Executive had endorsed the conclusion that the risk level is the same as natural gas.

Tom Baxter re-stated that there were three times as many explosions in the hydrogen scenario, albeit these being smaller, in the Arup risk assessment.

Mark Neller noted that the important factor was the number of people injured.

Tom Collins said that he was an observer in the building safety work, as Bosch's focus was on appliance safety. He described that he recognised Mark's point, on the risk being equivalent, and noted the validity of Tom's point, with the findings that hydrogen combustion was more likely in the home, however the severity of this would be lower than natural gas, therefore the overall risk was the same. Tom pointed out that the main way that people are hurt by gas is not by explosions, but is by carbon monoxide. He set out that carbon monoxide risk had not been included in the risk assessment work, but that it was eliminated with hydrogen, making hydrogen in the home safer than natural gas. Tom discussed his initial concerns with hydrogen, and assured that it could be made safe. Tom also discussed the point around corrosion on pipes, and that this was true when hydrogen was in steel pipes with high carbon content, at high pressures or high temperatures. He said that in homes, gas is at low temperatures and low pressures, so corrosion issues disappear.

Michael Liebreich praised the Arup risk assessment, but noted that ventilation requirements applied including non-closable vents of 10,000mm² (a four-inch square) for rooms with hydrogen appliances or pipework. He noted that this debate was about whether hydrogen was as safe as natural gas; but that this was not safe, noting the case of a gas explosion in Jersey in which ten people died. He suggested that as engineers, the panel members should engineer out risk, such as gas. He discussed that heat pumps do not explode, re-iterated that the discussion should be about the electrification and district heating of the heating system, and set out that the country should move straight to electrification of heat due to its inherent safety.

Cllr Gittins discussed that this would not happen soon as it was not the direction of travel of the Government. She set out that this trial should have been about net zero energy, rather than hydrogen, and that the messages heard at the meeting from residents would be fed back independently to Government, and that the ultimate decision would sit with Government.

Michael Liebreich discussed ventilation in relation to the Energy bill passing through parliament. He discussed that this involved changing the law to enable gas networks to enter homes to enable ventilation.

Angie Needle clarified that Cadent had no plans to forcibly enter people's homes. She set out that the reason for the change in the law is that Cadent can currently enter people's homes if there is a natural gas risk, and that Cadent wanted to ensure that the same applied in a hydrogen trial.

Cllr Gittins read out a question from Luke Sharples, "The proposal for the Hydrogen Village in Whitby has been announced and run without prior consultation with residents inside the area and there has been a failure to address concern about the project. For the project continuance must be surely be put to a public vote by

all affected members in the trial area?" Cllr Gittins discussed that there was a commitment now for this to happen.

Cllr Gittins read out a question from Gerald Smith, who asked "If at the end of the trial it does it go back to natural gas at no cost to us. Will this means our house devalues if they go ahead".

Angie Needle discussed house prices. She recognised that there was a lot of concern about this, and that Cadent were doing work to understand this. Angie said that heating system doesn't typically have a significant impact on house prices, though the EPC does have some impact. Angie committed to share information on this as soon as a study looking into this was concluded, and said that if there is a switch back to natural gas, this shouldn't impact on house prices.

Cllr Gittins conveyed a question from Daniel Briscoe relating to insurance rises. Angie discussed that a piece of work had been started to engage with the insurance sector so they can assess the potential impacts. Angie discussed that any increase in insurance would be covered in the proposal.

Cllr Gittins discussed a question from Stephen Lanceley, relating to gas fires. He asked about the availability of hydrogen fires.

Mark Neller addressed the question, discussing that the Hy4Heat programme had involved the development of hydrogen fire products, cookers, and boilers with all this information on the website. Mark noted that there were about 6 types of fire available.

Cllr Gittins committed to publishing all the questions received.

Professor Andrews commented on a previous question. He stated that there was no doubt about the role of Hydrogen for industry, that it is only a small extension to make it for home heating. Cllr Gittins discussed the important role industry played in supporting local communities.

Cllr Gittins noted a question regarding house prices, and then Professor Cebon contributed, and said that he objected to Dr Needle's reference to the Energy bill, stating that the act would be modified so that persons running the trial has clear grounds to enter private properties, to carry out essential works for the purpose of the trial, including safety measures such as installing appliances and installing and testing safety valves, undertake inspections and tests for the trial, such as safety checks, and disconnect the gas supply in the property. He stated that that meant that Cadent has the right to come in and disconnect the gas supply and do what they like, including putting holes in walls. David said that there would not need as much hydrogen as electricity, because we could use curtailed electricity, he asked whether Dr Needle knew how much of the day/week/year that is, and said this was about 5%. He said that in the context of a 35x increase in electricity required, that

5% would not make much difference. He said that Dr Needle stated it was essential that we have gas to store energy to deal with times when we don't have heat. He noted that there were many ways to store electricity, and claimed that hydrogen is the least efficient way of energy storage, discussing options such as pumped hydro-electric, compressed air and gas, which he said were more effective and cost efficient. He stated that the claims made were spurious and the points Dr Needle made regarding the energy bill were incorrect.

Angie Needle addressed the points raised. She re-stated that Cadent have no intention of forcing their way into anyone's home, at any point. She objected to his analysis, which Angie claimed assumes that Hydrogen cannot be stored, and that all the gas in the country is used for heating. Angie stated that there would be a need for 40 GW of renewable wind to generate the green hydrogen needed for home heating. She stated this was more than achievable, and that there was a challenge linked to economics, and recognised the efficiency of heat pumps. Angie referred to periods of low wind as a risk in a wholly electrified system, she noted that significant expansions in the electricity system such as pylons, substations and cables would be needed to deliver on future electricity requirements. She discussed that the energy system would cost £19bn more per year without hydrogen than with hydrogen, or £560 per household. Angie stated that without the hydrogen option, the only choice would be electricity.

Cllr Louise Gittins read a question from Michael Cobb, "How will heating homes with hydrogen help the UK achieve net zero?"

Tom Collins addressed the question. He said that there had been a false dilemma set up by this question, whereby electrification and hydrogen were set up as being in competition, and he felt this was not true. Tom said that Hydrogen was not a silver bullet, and that there would be a mix of technologies to help the UK to achieve net zero. He said that hydrogen was valuable for heating due to many UK homes being challenging to convert, and restated that this trial was a no-more-natural-gas trial, rather than a strictly hydrogen trial. Tom outlined that hydrogen offers an alternative for electricity in the future energy system, and that it was very similar in user experience to that of natural gas. Tom said that no-one was suggesting all heating should be hydrogen, and that what was being proposed was a mix.

Michael Liebreich noted that he was a strategic advisor on the most recent Climate Change committee strategy, and said that where the CCC refers to hydrogen heat, it was in small amounts, and about hybridising electrical heating in commercial heating. He said 33 out of 33 studies agree there is no role in domestic heating. Michael agreed there are times where there is no wind or sun, and said that didn't mean hydrogen needed to go into homes. Michael said that there might be long duration storage, in salt caverns, depleted gas fields, and said it should be generated back to electricity centrally, and that the argument that having two systems was better than one was specious.

Cllr Gittins took questions from the floor. The first person asked, "If it's a trial and about equal technologies, why are we not seeing investment into electrical network which around Whitby, I've had failures on my road, and it's diabolical, I'm on a 60 amp fuse, and it's not fit for purpose for the infrastructure. We are seeing massive investment into the gas network for this trial, where's the massive investment into the electrical network that supports the fact that it's an even-playing field for all, and it's just not there. I have posed this question before and it's in your blue bag".

Cllr Gittins noted that this was a question the Council could ask to Government. Angie Needle also discussed that Cadent were working with the local network operator to ensure there was capacity in the network, so that the trial could go ahead. She said this was a really good point, and that there is no electrification village equivalent, and that there was a big challenge in delivering these upgrades nationwide. Angie discussed that the Government's heat team was split between the electrification heat team and the hydrogen heat team, and Cadent's feedback has been that these should be together.

The person raising the question went on to say that this was "not Cadent's problem, this is Scottish electric's problem, and if a significant proportion went for electrification, the network currently cannot take it, that's already been established". Angie agreed that the current network would struggle to deal with heat pumps in everyone's homes. She said that Cadent had been speaking to the distribution network for quite a long time. Cllr Gittins noted that she had heard concerns from SPEN about network capacity.

The next member of the public to ask a question was a representative from the Heat Pump federation. He stated that he was learning about the trial tonight, and that heat pumps were available. He asked why the discussion was focused on hydrogen, rather than heat pumps. Angie outlined that the purpose of the trial is to demonstrate a conversion to hydrogen, however, said that people who did not want to have hydrogen would be provided an electrical alternative, and that Cadent's preference was for this to be a heat pump. Angie noted that they were working with British Gas who install both boilers and heat pumps, and that Cadent had asked for heat pumps to be installed in the Hydrogen experience centre so that people could see how they operated.

The person raising the question asked a supplementary point, asking what the goals were, what would make this a successful trial. Angie discussed that the Government had set out the parameters on the trial, and that it covered how to convert the gas network, the experience of doing so, residents experience of hydrogen, skills and training, and that this was to inform Government on how it might be rolled out more broadly.

The next member of the public to ask a question said she lived on Woodland Road, and thanked everyone for attending. She said it was really insightful for her,

she wanted to ask “if it’s a hydrogen trial, and it’s a trial to test the area, why aren’t you offering other things such as solar panels”. Angie discussed that they have been receiving feedback to hone the offer to residents to make sure that it works for you. She said it is a hydrogen trial, and that it must be value for money for government, while also being valuable for residents. Angie mentioned that this offer included elements of home energy efficiency, servicing and maintenance, and other incentives.

Michael Liebreich discussed that solar for heating in the UK was really hard, because the solar power, which is cheap, is all during the summer. He said that therefore, the heating solution to run against hydrogen is likely district heating, due to the heat present in industry, which could be used as part of a network. He also discussed a low temperature shared loop, which would be upgraded in individual homes to provide the heating and hot water needed.

Mark Neller discussed that Arup had recently conducted a study on low temperature heat networks in Leeds, and said that all consortium partners had chosen to pull out rather than apply for further funding as the business case does not stack up, as you can’t force consumers to swap on to the heat network. Mark discussed that Government hadn’t got this right, and that we should be talking about a number of community demonstrations, trialling different technologies, choices and options, and understanding how that works in practice. This should not be badged as a hydrogen demonstration, it should be badged as a no-natural gas trial.

The next member of the public to ask a question made an observation about the “Large number of waste heat sources, I had this confirmed to me today as I toured Whitby talking to people about heat pumps, one of the people I saw was a chemical engineer of 30 years standing who talked to me in detail about how much waste heat there was at the Stanlow refinery where 40 degree centigrade heat is being vented to atmosphere through what he called fan-fins. There are many other sources as well, so a quick question to Dr Needle, is there an update please, residents here are very sceptical about British gas fitting a heat pump, on BBC 5 live you clearly alluded to the possibility of an alternative installer, hopefully of the residents choice, carrying out the install on their behalf, and I would hope that’s something that the heat pump federation would also endorse strongly, as we build a strong skill base to install the 600,000 heat pumps a year that the government has called for.”

Angie discussed that at the present time Cadent plan to use British Gas as the installer, said that they were a reputable organisation who would be here for a long time. She said they installed heating systems all the time, and that they had installed heat pumps for a long time, and they are accredited by MCS.

The next member of the public to ask a question said “This is for Louise and Angela, I’m actually a Whitby resident and it’s the first time I’ve been involved in

any of this so thank you very much firstly. How many properties are involved in the Whitby area? How many houses are we look at?" Angie confirmed there were just over 2000 properties. The resident continues "How many properties have Cadent gone into to do their reviews?" Angie discussed that 1100 had been surveyed thus far. The resident continues "so, what, 55-60%, so the remaining properties, what happens here, what's the future, you did say earlier on that if we have safety concerns we will enter a property, so if you need to review all 2000 properties, you need to make sure every one of them is safe, so with 900 properties, what happens there.". Angie said that the preference was to speak with all residents, survey all properties, and that even if they had concerns, she would still ask that residents came forward and took the opportunity to have a survey, and share those concerns. She discussed that there were quite a number of people that Cadent had not been able to contact, so were considering how they could address this. The resident continued, saying that most of the 900 likely would not allow Cadent to go into their properties, reflecting on how many posters there were in the Whitby area saying "No to Hydrogen". He re-stated that he would not allow hydrogen into his property and that he doubted the viability of the project as a result.

Cllr Gittins noted that the Council were concerned about the March cut-off date and that the Government were asked to extend this deadline, but that Government refused to do so.

Michael Liebreich contributed, saying that any house that does not choose to participate in the trial will have to be shut off from the gas network for safety reasons, and that might require a forced entry by Cadent, and that is why Government is changing the law. If that power will not be used, then all it would take is one person to say no, and this trial is blocked. Michael said he did not believe that this trial could go ahead without forcing entry into those homes. Angie discussed that this is not something that Cadent wanted to do. She outlined that it was not the right thing to do, and not something Cadent will do.

The next question related was "With the Council and the Chief Executive, and I think it's a bit disingenuous to say you are not part of this. The CW&C logo sits alongside Cadent's on the Whitby trial facebook page, and it's taken a huge amount of effort by residents to hear any voices which are critical of hydrogen. It seems to have been done in the wrong way round, and I can partly understand that, because the fossil fuel lobbyists are putting huge amounts of money into lobbying politicians, Cadent who were at both the labour party conference and the conservative party conference pushing their wares, so all this has been going on in the background, so what I would like to really say, is make a plea to those making decisions to have greater involvement with people, before you go putting logo next to Cadent's, you have a proper full consultation, not afterwards, after all the work of the residents."

Cllr Gittins responded to this, setting out that the Council supported this in principle because the area is the 4th most polluting area in the country, and in principle it

sounded like a good idea, to look at a different way of doing something. Cllr Gittins reiterated the importance of tackling climate change. Cllr Gittins went on to say that over time and following meetings with residents, she recognised that there were genuine concerns and questions which weren't being asked, and that these questions needed to be asked. She said that she wanted to put this event on sooner, but that a by-election in Chester prevented this due to purdah rules, and budget setting in February. Cllr Gittins spoke on the importance of listening to residents directly and discussed that she had written to Government on the issues raised and had not had a response. Cllr Gittins discussed that her and Justin Madders MP wrote to Government to ask them to conduct a public poll, and said she was pleased that Government have said they want the support of the local community. She said she would not pretend she was not supportive in principle because of a desire to find solutions to the climate crisis. Cllr Gittins thanked all the experts present for their contribution, and asked for a round of applause for everyone that had attended. She went on to challenge the point raised regarding politicians being lobbied by the gas industry. Cllr Gittins affirmed that everything said here tonight would be share with government in a separate letter.

Cllr Gittins thanked the experts once again for the contribution, and welcomed the Taskforce back to take part in a discussion.

6 Taskforce Discussion:

Prior to the Taskforce discussion session starting, Cllr Gittins took final statement from the floor.

The first statement was a request for a show of hands. The second was a person who reflected on Angela Needle saying that Hydrogen could not be used on its own (as part of the UK heating system) and that the electricity grid isn't up to this amount of use. The member of the public raised whether this test was realistic if the electricity grid was not sufficient. Cllr Gittins agreed that this was an important point.

Steve Hughes of the Chester Sustainability Forum was the first Taskforce member to share their views. He discussed that he had some unanswered questions, one relating to the definition of "substantial support" from the Government. He discussed that the Chester Sustainability Forum had held an event discussed hydrogen, and that hydrogen for home heat was not a recommended area. Steve noted how interesting it was to hear about the safety data and work that had been undertaken.

Niall MacFadyen of the Chester Sustainability Forum was the next Taskforce member to speak. He discussed that he had read on why using Hydrogen for heating homes was a bad idea, and he was interested to be invited along tonight to hear the passion from all the residents. He was surprised by the level of objection, he said you can understand why technology needs to be trialled – but why does it

need to be done here, and what's the offer to people, and it would seem that the offer is not attractive enough to participate in a trial.

Cllr Paul Bowers was the next Taskforce member to speak. He discussed that the environment had not been mentioned, and that looking for a different power source is no-one's answer to this – reduction had not been mentioned. He said that if Government and the Council were interested in solving fuel poverty, that the first thing to do was reduce energy use – insulating homes. He said that fossil fuel companies should use profits to pay for insulation. Cllr Bowers set out that the argument about hydrogen is nuanced, and that home heating is the last thing it should be used for. He said that the footprint of hydrogen is high, and that industry was proposing blue hydrogen with CCS, which he said was unproven on the scale proposed locally. He said that grey hydrogen has the same carbon footprint as aviation, and so green hydrogen should be used to replace the use of grey hydrogen. Cllr Bowers said that this (domestic heating) was about more energy, less heat, and that this was about vested interests. He stated that there was £3bn in subsidies supporting the programme and this would insulate all the homes of the most vulnerable people in the North West.

Cllr Gittins invited Cllr Bowers to comment on the few people in the room who did not feel there was a climate emergency; there was uniform agreement across the Taskforce that climate change is an indisputable fact.

Cllr Simon Eardley was the next taskforce member to contribute, and was grateful for an enlightening evening. He said it that all political parties on the Council agree with the principle that there is a climate emergency, but that he was not consulted on whether this should take place. He said it was an unreasonable assertion to say that the Council as a whole supports this process. He was encouraged to hear about the public vote, and expressed the importance of verification. He requested that this would take place in May at the same time as local elections. Cllr Eardley said he was surprised by the mood of the borough Council in this trial, he said that the Council promoted this trial, including as an exemplar project at the local government conference last year. He said that the leadership of the Council had an aspiration for the whole of Ellesmere Port. Cllr Gittins objected to this. Cllr Bowers objected, noting that he had not heard objections from any other Councillor in public meetings. Cllr Eardley said that there was a statement claiming that the whole borough wanted to make use of this resource, and said if he was wrong on this point, he was sorry. Cllr Gittins objected to this, and Cllr Eardley reiterated that he had seen it. Cllr Gittins requested to be sent this statement, and Cllr Eardley agreed to do so, Cllr Gittins described that this could be referred to the monitoring officer. Cllr Eardley set out that there was no question about the support given to Hydrogen going forward. Cllr Gittins asked Cllr Eardley how he had lobbied Government against this. Cllr Eardley discussed that he was not opposed to a trial in principle, as that is how new technology comes to market. Cllr Eardley discussed the energy bill, and asked Justin Madders MP to bring forward the points raised, and said that he was concerned about the data, as he had been told

that 66% of residents in Whitby were in favour months ago, and expressed concern about the data and its verification, and stated the importance of ensuring data from residents is correct.

Cllr Jill Houlbrook was the next taskforce member to participate. Cllr Houlbrook thanked residents for coming out, saying that high attendance was unusual at Council meetings, and inviting residents to attend some more of them. She reinforced the importance of listening to communities, and said that she respected that the community had come together to fight something they see as wrong. She said that Councillors were not given a vote on whether this should happen, and said that it was important that anything that happens is the right thing for the community. She noted the commitment to a vote, and said that the question should not be “Council questions”, they need to be questions that ensure community voices are heard, and that there is faith in any result.

Cllr Christine Warner was the next member to contribute. Cllr Warner thanked attendees for coming along, and said that she and others had learned a lot during the event. She said that this is a democratic process, and that this is the point of democracy – that there is discussion, and if the people do not support the process – all this will be fed back to Government. She confirmed that the views expressed during the event would be taken into account, and fed back to Government. Cllr Warner discussed the importance of the vote. Cllr Bowers said that he was the only Councillor who had opposed the trial.

Justin Madders MP set out the importance of the event and the necessity of it. He said that not every question had been answered, but that it was useful to hear different sides of the discussion. He discussed the importance of the Council’s commitment to consult on the vote and how it will operate. Justin said that the Energy Bill is currently in the House of Lords, and that he was working on an amendment to ensure there was a democratic check on any trials, and noted that he had heard the points relating to forced power of entry and his intention to reference that when the bill comes to the House of Commons. He committed to convey residents concerns about how this has been run so far. Justin continued, saying that if there are 33 studies concluding hydrogen does not have a role in home heating, then what is the purpose of the trial, and why is it continuing, and said these were key questions for government. He concluded by saying he was keen to continue hearing people’s views.

7 Next Steps:

Cllr Gittins committed to summarising what had been said at the event, and conveyed that the Council was putting forward five tests, that we want to make sure are met. She noted that the poll would not be legally binding but it will be run like an election. Cllr Gittins noted the complexity in timing the vote during the May election, because one of the wards is a split ward, and the Council will have extra pressure at these elections due to voter ID. She noted the need for voter ID at the

next election. Cllr Gittins confirmed the commitment to work and consult with residents to ensure the wording reflects residents views on what the wording should be.

The second test is price – and ensuring that nobody is worse off before, during or after the trial, regardless of whether they choose hydrogen or electric, if it were to go ahead.

The third test was a safety framework for hydrogen assured by the HSE.

The fourth test was linked to green hydrogen, that all hydrogen for the trial should come from green sources.

The fifth test related to jobs and skills for local people in the community.

Cllr Gittins summed up, saying that it was lovely to see and hear from everyone, and expressed a wish that all the experts might be able to find something to agree on one day.

Cllr Gittins gave the final say to a resident. The resident raised a question, saying that “Cadent have absolutely refused to have a public debate and to have a public vote, an independent vote, you have now agreed to an independent vote along with Justin, can you assure us that Cadent will have absolutely no say in what goes into that vote. It’s got to be just the residents.”

Cllr Gittins provided an absolute assurance on this, setting out that Andrew Lewis’ role as Returning Officer is important for democracy, and that the role as Returning Officer is answerable to Parliament, and so Cllr Gittins reassured the resident that this would be a Council run vote, and committed to involving residents in every step of the way.

Appendix 1 – Statement from Government:

Information for the Cheshire West and Chester Council public engagement event (28th February 2023) on the proposed hydrogen village trial in Whitby (Ellesmere Port)

Why are we doing a hydrogen village trial?

Heat in buildings is one of the biggest sources of greenhouse gas emissions in the UK, accounting for 23% of total UK emissions. If we are to meet net-zero targets, virtually all heat in buildings must be decarbonised. Given the diversity of buildings and consumers' needs, no single low carbon solution can provide the best option for everyone. It is possible that hydrogen heating could have an important role alongside heat pumps and heat networks. Hydrogen could offer consumers a low-carbon heating option that works in a very similar way to natural gas.

However, unlike other technologies (such as electric heating), 100% hydrogen for heating is not yet an established technology. Further work is required to understand the feasibility, costs and convenience of transporting 100% hydrogen in the gas grid and using hydrogen for heating and cooking. The Government is working with industry, Ofgem and the HSE on a programme of research and development and testing projects to build this evidence base. This includes hydrogen heating consumer trials, designed to provide real-world evidence on the practicalities, costs and consumer experience of using hydrogen as an alternative to natural gas for heating. The village trial will provide essential evidence to inform government's strategic decisions in 2026 on the role of hydrogen in heating.

Role of Gas Distribution Networks

In July 2021 the Government and Ofgem jointly asked the gas distribution networks to develop proposals for a hydrogen village trial. Amongst the reasons why the Government asked the gas networks to lead on the delivery of the village trial is their ownership of and access to the gas distribution network - a fundamental asset needed to undertake the project. They also play a central role in the natural gas market and have existing relationships with the supply chain.

Local support

Strong community engagement and support is vital for the success of a project like this. That is why evidence of substantial local support, validated by an independent external source such as a local council, is one of our key assessment criteria in selecting a location. We will not go ahead with a trial in an area where there is not strong local support.

Protecting consumers

To ensure that residents in the eventual trial area receive appropriate information and are treated fairly, the Government has committed to putting in place robust additional consumer protections, which we set out in the response to our consultation, 'Hydrogen for heat: facilitating a 'grid conversion' hydrogen heating trial' in April 2022. This sets out a range of protections including transparency of information, financial fair treatment, fair treatment for all, and quality of service. These protections will enhance the existing requirements in energy and consumer laws and help give consumers confidence to take part in the village trial, knowing that their interests are protected before, during, and after the trial. We are working closely with Ofgem and the gas networks to deliver these aims, including through the Energy Bill which is currently going through Parliament.

Safety

Safety is a top priority for the Government and we are working closely with the Health and Safety Executive (HSE) – the independent regulator for health and safety – to ensure that the safety risks associated with hydrogen for heat are properly understood and managed by the gas networks. Before any community trial can go ahead, the HSE will need to be satisfied that the trial will be run safely.

Next steps

The gas distribution networks will submit their final proposals at the end of March and the Government will take the decision on the trial location later this year.

Appendix 2: Questions received in advance of the Meeting:

No.	Statement
1	We all don't agree with it. Its dangerous. Everybody does not want your hydrogen village in our community. I hope it doesn't go ahead for all our sakes.
2	House prices. House insurance. How does the Council/Cadent know how many households are against hydrogen village trial.
3	I have concerns about the safety of hydrogen in the home environment. It is highly flammable and corrosive to metals, so what is the longer term effect on home gas devices?
4	If at the end of the trial it does it go back to natural gas at no cost to us. Will this means our house devalues if they go ahead
5	There are plenty of greener options i e. Solar Panels and Wind Turbines - research suggests much greener than hydrogen so why are we not being offered other options if this project is about sustainability and not profit?
6	We are against a trial which experts have said is not safe,not suitable for houses,devaluing house prices.Also the basic principle of it being forced on us by people in power. Why cant you choose a newbuild estate then people have a choice..houses could be subsidised. Also the unknown cost implications to us all and household disruptions.
7	Option 3 stop the trial to many un answered questions. Possible insurance rises. Possible house price drops. No guarantee it will be safe.
8	Can it be confirmed that whether you choose to have hydrogen gas or electric heating you will not be worse off during and after the trial?
9	Why are the residents not being compensated for taking part in this trial? Giving us new "free" boilers, fires etc is just replacing what we already have and many won't be to our personal taste, there are limited choices, we already have boilers etc. And redecorating where necessary up to £1000, well that won't go far. And it's only putting right any mess made by you.So why are we not being offered compensation for you using our homes?
10	I am very worried about the cost to us after the 2year period.I feel would should have a guarantee that it will cost no more than gas .
11	I strongly believe that Hydrogen is proving to be much more useful than normal gas use for household boilers!
12	The CCC report on residential heating recommends heat pumps and better insulation as the best way to heat homes most of the time. However, they also say that conversion of the gas grid from Methane to Hydrogen will start soon, at the track 1 clusters. i.e. it will start in Elsmere port, soon after completion of the trial and roll out from there at about 10Km per year, so Elsmere port will be converted after a year and Chester will be converted after a couple of years. Please explain your plans post trial and how they compare with the CCC recommendations for home heating in the 2030's and beyond Rather than saying it is just a trial, assume the trial is a success and explain what you will do next. Apparently the recommendation from the gas industry is that people should be given a choice (Hydrogen or heat pumps or hybrid) is this your policy and how do you expect the heating costs to compare.

13	Why has it taken CWAC 18 months to organise a public residents meeting about the trial since they were first notified; and why has the meeting been arranged 42 days after the Cadent resident survey closed meaning any residents change of decision will not be notified to OfGem
14	<p>I'm afraid we're unable to attend this meeting but would like to lodge our concerns & opinion.</p> <p>We're totally opposed to this proceeding in our area for the following reasons:</p> <ol style="list-style-type: none"> 1. the technology in residential homes is not fully tested/approved & should not be labelled as a 'trial' when it is, in fact, an experiment 2. we are not willing for our home to be used as part of a trial; this is already impacting residents' ability to sell their homes, and properties will de-value as a consequence 3. whilst we recognise the need to find alternative energy sources for our homes, alternative choices should be introduced nationally, following fully-completed/successful trials 4. any such scheme should be democratically decided before proceeding; we see this as a fundamental breach of our rights 5. Trials should be conducted within authority owned property not civilian properties, especially properties not suited retro infrastructure modifications for hydrogen...we fully believe the use of hydrogen is not suitable for older properties & is unsafe 6. Cadent representatives have not been providing balanced information to the (more 'naive') residents and have been heavily bias towards the financial benefits without also communicating the potential threats/expenses during/following any such trial
15	I would like to ask a question about blue hydrogen
16	Should have democratic right to choose individually. Had no independent view to oppose hydrogen. Test it on industrial first. Might have detrimental effect on my house saleability. Cost of it long term. What if trial fails return to gas? How safe is it. I have a gas fire (no chimney) told I would have to have electric one (dont want).
17	will the value of my house suffer. Replacement fires. Explosive risk. Insurance cover.
18	Unhappy resident. Adamant (no trial) for hydrogen has. It is industrial fuel not suitable in domestic households. I am against the trial for Whitby.
19	If the trial goes ahead and there is an increased demand for electricity is the local infrastructure/network capable of coping and what is the risk mitigation of electrical issues as I've seen no improvements/investment in the area unlike the gas network which could be redundant in the long term.
20	Would like to express that I do not wish to take part in the proposed trial for the village. I am concerned about the safety aspect. Concerned of the impact and potential risk for my home.
21	<p>I am against our privately purchased homes that we have worked very hard for, being used for such a dangerous experiment.</p> <p>Why are the council not using their own existing housing stock or better still using new builds whereby the people purchasing know the risks before they part with their cash?</p> <p>In addition with a new build, all products can be built to specification negating the need for replacement boilers. Cookers, hobs, fires, piping etc so reduced costs.</p> <p>Has this not been considered and if so why was it rejected?</p>

22	<p>An independently monitored vote should be held to enable residents to say or no. Why are other areas of the town not being consulted? The hydrogen will be pumped under their premises as well.</p> <p>We have no guarantee that the replacement appliances will suit our current decor and kitchens.</p>
23	<p>I am generally in favour of any initiative that could reduce carbon emissions. My main concern is the lack of clarity regarding fuel prices once the scheme has ended</p>
24	<p>What problems do you foresee happening during this trial.</p> <p>Rumour has it that new pipelines are to be installed requiring drives to be dug up and that air vents are required in all doors, also that some kind of air conditioning unit fixed to the outside wall ?</p> <p>Heating and cooking fittings will not be replaced with like for like ie expensive gas fires and cookers?</p>
25	<p>Will this project go ahead??</p> <p>Im hearing some negative comments and feeling uncertain that it will get approved</p> <p>If so, when will it start?</p> <p>How long will it take to complete?</p>
26	<p>If the hydrogen village goes forward, I am concerned the value of our homes may fall significantly or we won't be able to sell. What assurances can you give me that this won't happen?</p>
27	<p>The proposal for the Hydrogen Village in Whitby hjas been announced and run without prior consultantion with resident inside the area and their has been a failure to address concern about the project. For the project continuance must be surely be put to a public vote by all affected memeber in the trial area?</p>
28	<p>Why has this been forced upon us giving us no choice weather we want to take part or not.</p> <p>Are you prepared to put it to a vote for every resident it effects. The vote would be as simple as yes or no.</p>
29	<p>How will heating homes with hydrogen help the UK achieve net zero?</p>
30	<p>Why are human rites been taken away from us with private homes</p>
31	<p>Who decides if the trail is a success and will the markers for success be clearly defined before the trail. If the markers have not been met , will gas be reconnected?</p>
32	<p>What is the biproduct from making the hydrogen gas</p>

33	<p>Do Cadent have a plan for how widespread adoption of hydrogen heating can help the UK achieve Net Zero? If yes please can this plan be published? If not why not?</p> <p>Prof Andrew: in your written evidence to the Houses of Parliament you state:</p> <p>"The hydrogen route to decarbonisation of heat has few uncertainties".</p> <p>Much of this is based on the NGN H21 report.</p> <p>Extrapolating from this report gives a total upfront cost of around £200 billion but also 2.2x the cost for blue hydrogen versus fossil gas.</p> <p>And this report was based on an 80% CO2 reduction target. As you know the cost of the final few % of captured CO2 increase exponentially.</p> <p>No carbon capture schemes of this scale have ever come close to delivering a level of performance that meets Net Zero requirements.</p> <p>Finally we have upstream and low pressure leakages of methane and hydrogen respectively.</p> <p>It would be far more accurate would it not to say that:</p> <p>"The hydrogen route to decarbonisation of heat has VERY MANY uncertainties".</p>
34	<p>The Industrial Revolution started here with water power from mills and turbines, so why does CWAC and the University of Chester support the continuing combustion of fossil fuels by the companies behind HYNET for "blue" hydrogen and their unproven non-existent CCS technology, when Cheshire has estuaries and a coastline that could and should be developing proven tidal and turbine energy to create energy and clean emission free "green" hydrogen, because continuing to support HYNET delays and blocks development into the renewable energy we need to get to Net Zero.</p>

Appendix 3: Web questions received during the meeting:

No	Question or statement
1	1. I have a 4 year old boiler with a purchased 10 year full warranty parts/labour. Will this warranty be covered like for like and will service costs be the same ? 2. What happens to my existing boiler? What if I want to keep it?
2	Could you not find any residents to speak for the hydrogen trial other than Labour Party members
3	Leeds university guy. You are being funded by the bill and Melinda gates foundation
4	CARBON DIOXIDE IS A GAS OF LIFE
5	With the country already in a cost of living crisis and a massive increase in fuel poverty across the nation, how do you expect residents to be able to afford hydrogen after the trial which costs double that of gas
6	Please carry out a show of hands during this meeting to find out how many for/against people there are at this meeting, it seems so far that there is very little support in this room
7	Why are the council trying to shift blame onto the government rather than accepting their own blame for putting Whitby up for the trial without seeking consent from residents
8	Hi Louise, I'd like to ask if businesses in Whitby and their premises are being included in the potential trial? If so, how are their views being taken into account - negative or positive. Tks, Ashley
9	What source of independent advice have residents had access to up to the point of having to submit our feedback surveys to cadent which we were told we're going to be used to justify public support for the trial
10	Hydrogens mass is 8 times smaller than methane surely this means it is more likely to find a leak in our pipes than methane. So how can it be said that if it is good for methane it is good for hydrogen?
11	Why does the chair keep getting to ask her questions but the residents in the room get told off for having their say/questions in an engagement session for THE RESIDENTS.
12	What impact will the new ventilation requirements needed for hydrogen have on the heat losses for the dwelling?
13	What is the impact on the maintenance costs for the gas grid if significantly less calorific value is flowing in a partial hydrogen scenario?
14	After the Gas inspection, we were told that because our gas fire was not a standard size, it would not be possible to replace it under the hydrogen proposal. Thank you
15	Hi Louise, What happens if everyone chooses electric heat pumps and nobody chooses hydrogen in the trial?