



Cynulliad
Cenedlaethol
Cymru

National
Assembly for
Wales

Cofnod y Trafodion The Record of Proceedings

[Y Pwyllgor Newid Hinsawdd, Amgylchedd a
Materion Gwledig](#)

[The Climate Change, Environment and Rural
Affairs Committee](#)

18/01/2017

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 o'r Cyfarfod
 Motion under Standing Order 17.42 to Resolve to Exclude the Public
 from the Meeting

Cofnodir y trafodion yn yr iaith y llefarwyd hwy ynnddi yn y pwyllgor. Yn ogystal, cynhwysir trawsgrifiad o'r cyfieithu ar y pryd. Lle y mae cyfranwyr wedi darparu cywiriadau i'w tystiolaeth, nodir y rheini yn y trawsgrifiad.

The proceedings are reported in the language in which they were spoken in the committee. In addition, a transcription of the simultaneous interpretation is included. Where contributors have supplied corrections to their evidence, these are noted in the transcript.

Aelodau'r pwyllgor yn bresennol
Committee members in attendance

Jayne Bryant	Llafur
Bywgraffiad Biography	Labour
Sian Gwenllian	Plaid Cymru
Bywgraffiad Biography	The Party of Wales
Huw Irranca-Davies	Llafur
Bywgraffiad Biography	Labour
David Melding	Ceidwadwyr Cymreig
Bywgraffiad Biography	Welsh Conservatives
Jenny Rathbone	Llafur
Bywgraffiad Biography	Labour
Mark Reckless	UKIP Cymru (Cadeirydd y Pwyllgor)
Bywgraffiad Biography	UKIP Wales (Committee Chair)
Simon Thomas	Plaid Cymru
Bywgraffiad Biography	The Party of Wales

Eraill yn bresennol
Others in attendance

Huw Brunt	Iechyd Cyhoeddus Cymru Public Health Wales
Joseph Carter	Sefydliad Prydeinig yr Ysgyfaint British Lung Foundation
Isobel Moore	Cyfoeth Naturiol Cymru Natural Resources Wales
Peter Oates	Cadeirydd, Fforwm Ansawdd Aer Cymru Chair of Wales Air Quality Forum
Clare Whitfield	Cydbwyllgor Cadwraeth Natur Joint Nature Conservation Committee
Paul Willis	Ricardo Energy and Environment

Swyddogion Cynulliad Cenedlaethol Cymru yn bresennol
National Assembly for Wales officials in attendance

Louise Andrewartha	Dirprwy Glerc Deputy Clerk
Chloe Corbyn	Y Gwasanaeth Ymchwil Research Service

Alun Davidson	Clerc Clerc
Katie Wyatt	Cynghorydd Cyfreithiol Legal Adviser

*Dechreuodd y cyfarfod am 09:31.
The meeting began at 09:31.*

Ansawdd Aer yng Nghymru Air Quality in Wales

[1] **Mark Reckless:** We will commence. We have Peter Oates who, for one moment, we're trying to locate, and may be running late. But, I think, with the witnesses we have, we would like to commence what, initially, will be a one-off session on air quality: an important issue, but the first time that this committee has addressed the area. If I could ask witnesses to start by telling the committee what you consider to be the key issues affecting air quality in Wales. Should I start with you, Isobel?

[2] **Ms Moore:** Thank you, bore da. In answer to the question, what I wanted to do firstly was to direct you to the statutory duty that Natural Resources Wales has in terms of producing 'The State of Natural Resources Report', which was first issued back in September. Within that, we considered all of the ecosystems in Wales and the different land-management types, be it woodlands, all the way to mountains and urban areas. There's a section in there that considers air quality. I wanted to take the main key points with regard to air quality from that report to highlight to you this morning.

[3] Firstly, in terms of nitrogen dioxide, this is one of the pollutants that has been identified as in exceedance of the European Union limit value, along with polyaromatic hydrocarbons and also nickel. Also, from a local air quality management perspective, approximately 40 local air quality management areas have been declared. Of those, the majority—all of them but one—are in relation to nitrogen dioxide. The other one is with regard to particulate matter sub 10 microns. In terms of other areas that were highlighted within the report, some of the reduction in pollutants such as sulphur dioxide, nitrogen oxide and PM10s over the last 30 to 40 years has been as a consequence of changes in regulation, reductions in industrial sources; so whilst the underlying trend is reduction from those particular pollutants, as I've already indicated, there are clearly some hotspots in Wales where those pollutants are a particular issue.

[4] Ozone was also highlighted, whereby, again, there's been an overall reduction in ozone levels over the past 30 years, particularly for peak levels. But, again, there is still an increase in background levels of 0.2 micrograms per metre cubed on an annual basis, and there are three sites in Wales that have exceeded the objectives in previous years. Those are the main areas that I think, perhaps, should be of focus in terms of factual evidence as to what air quality is like in Wales currently.

[5] **Mark Reckless:** Thank you, and can I ask, are there any additional areas that you would emphasise over and above what we've heard from Isobel?

[6] **Ms Whitfield:** I think, with my focus on the natural environment, I'd like to reinforce the issue of—. The key issue there is nitrogen deposition. So, that arises from emissions of oxides of nitrogen and ammonia. In terms of the natural environment, we're interested in exposure to concentrations of these gases, just as we are for human health, but also in terms of the deposition of those. That might be through wet deposition or through dry deposition. Emissions of these gases can be transported long distances from their source and cause impacts at large distances from those. So, in Wales, we'll have high deposition in upland areas associated with long-range transport pollution and depositions through rainfall. So, there are, in Wales and across the UK, widespread impacts of air pollution, particularly nitrogen deposition, on habitats, biodiversity and the services that ecosystems provide. Another key point is ozone, mentioned by my colleague, and that reduces growth and yield of vegetation. So, it has an impact on crop yields, for example, and horticulture.

[7] **Mark Reckless:** And Paul, do you have a particular perspective that you would like to add on the general issues facing us in Wales?

[8] **Mr Willis:** So, from my perspective, in managing the air quality database for Wales and the Air Quality in Wales website, my perspective is more about public health and public information, and the major health concerns over the impact of particulate matter 2.5, where we've assessed that there are 1,300 additional deaths across Wales each year due to the impact of PM2.5, and nitrogen dioxide, where there are 1,150 additional deaths each year across Wales. The concern is really over the trends in the levels of those pollutants. PM2.5 is coming down, but there's not really any safe level of that pollutant. It has an impact, even at lower levels. Because of

the concerns, particularly over diesel motor vehicles and their control of their emissions—or the lack of control of their emissions in the real world—nitrogen dioxide concentrations simply aren't coming down as we would expect them to. We need to publish the evidence through the database and assess those trends in the future, and then consider how we can address the public health impacts.

[9] **Mark Reckless:** Could I ask you on the relative waste, the nitrogen dioxide emissions and the particulates at 2.5 microns? Can you explain to me the different health impacts and the relative importance of the nitrogen dioxide versus the PM2.5? And also, help me with the issue of the PM2.5; I think the other way they look at it is the PM10. Is it those larger particles or is it the smaller PM2.5 that are more of a risk to human health?

[10] **Mr Willis:** In terms of the particles, it's the smaller ones that are really of most concern—the ones that can get further down into the lungs and cause irritation. The really small ones can pass across into the bloodstream and carry other toxic chemicals to parts of the body where they can cause nasty effects. The health impact of particles has been known for a very long time. It's been known that they have a measurable health impact. Nitrogen dioxide: although we've had limit values to comply with, the actual health impact related to nitrogen dioxide has been difficult to separate from the other pollutants, which tend to be emitted in parallel—so, the particles. It's only recently, in the last two to three years, that health impact has been assessed against nitrogen dioxide in particular, but that is now of equal concern, really. As I said, 1,300 additional deaths from PM versus 1,150 due to nitrogen dioxide. So, although that's a more—

[11] **Simon Thomas:** Are those Wales or UK figures?

[12] **Mr Willis:** Those are for Wales.

[13] **Mark Reckless:** Can you just say those figures once again, as well, please?

[14] **Mr Willis:** Around 1,300 for PM2.5, and I think it's 1,150 for nitrogen dioxide, additional deaths, or deaths brought forward across Wales each year.

[15] **Mark Reckless:** Thank you. I would like to say that translation is available on channel 1, should it be required. Can I hand over to Simon

Thomas?

[16] **Simon Thomas:** Thank you, Chair. Just a couple of questions, if I may, around the relationship between the UK and the Welsh Government on air quality, because there's a shared responsibility. There are a lot of European directives, and the UK is the member state, but we are the ones that have to do the monitoring and the regulation. So, I think specifically for Natural Resources at this stage. There was an important High Court ruling last November brought by ClientEarth that said that the UK Government had failed to tackle air pollution, particularly around these emissions, throughout the UK, including, I understand, four non-compliant zones in Wales. The High Court judge said that the Department for Environment, Food and Rural Affairs's five-year modelling was inconsistent with taking measures to improve pollution. So, I wondered what steps have been taken by Natural Resources Wales, in conjunction with the Welsh Government, to tackle these non-compliant zones and the levels in Wales since that ruling last November.

[17] **Ms Moore:** It's helpful in terms of clarifying the various roles, I think, as you say, that many parties play a part in terms of the overall air quality perspective. So, the competent authority for the air quality directives is Welsh Government, as you say; for local air quality management, the competent authority is the local authority. In terms of our responsibilities at Natural Resources Wales, we are responsible for issuing permits that meet the requirements of the industrial emissions directive and previously the large combustion plant directive. We do this through the environmental permitting regime environmental regulations that were issued in 2010. Now, within those requirements, it is incumbent on us to ensure that any permit that we issue is protective to communities, health and the environment of Wales. We refer to the best available techniques document—or BREF document—which is produced by Europe, which sets out the techniques that should be employed by installations, and also the limit values that should be contained within permits. So, therefore, the permits that we issue refer to and are compliant with the European directives, both from an industrial emissions directive perspective, and also from an air quality limit value perspective, and that continues to be the case.

[18] **Simon Thomas:** Can I ask you how do you tackle a conflict, therefore, if what you set out is the case—and I'm sure it is—when we look at somewhere like Aberthaw, which has been found in the European Court of justice, through a case against the UK Government, to be breaking air pollution levels in breach of what would have been the large combustion

plant directive, but yet is still permitted under your regime to be making these emissions, and that case said that the emissions were unsatisfactory and breaking the directive? How do we reconcile these two regimes if you have a court of justice saying there's been a breach of the law, yet the permitting regime still allows that plant to operate? How does that work in terms of managing air quality in Wales?

[19] **Ms Moore:** At the point at which the permit was in existence, prior to the European court judgment case, the UK was of the view, as we were of the view, that the permit actually met the requirements of the large combustion plant directive. It's only subsequent to that decision that, as an organisation that's the independent regulator for industry within Wales, we have a look at that permit and consider the implications of the European court judgment, and make sure that we rectify that position. So, we have written to RWE to indicate that we will vary the permit based on the European court judgment, and that we seek information from them to allow us to do that. So, we're currently waiting for that information, but any permit that then is varied will meet the requirements of what was the large combustion plant directive and now the industrial emissions directive, and will take account of the European limit values, and have regard to the air quality objectives, which is the UK legislation. So, in that way, the two regimes are reconciled.

[20] **Simon Thomas:** So, since the judgment last September, you would have written to the company, but no reply yet, therefore no action yet, and so we are technically, at least, in breach still, I would suggest. But where does the responsibility, ultimately, for this lie now? Is it with the UK Government, with yourselves as the permitting regime, or is it with the Welsh Government as the overall statutory body in Wales that looks after air quality?

[21] **Ms Moore:** Our responsibility is in relation to the permit that will be issued with regard to the industrial emissions directive, and so, therefore, we will be in the process, and are in the process, of varying that permit to meet the requirements of the European court judgment.

09:45

[22] **Simon Thomas:** And just a wider question to finish, if I may—others may want to comment on this one—because, in looking at this case, I was struck by work that Greenpeace and Friends of the Earth had done, which said that pollution from Aberthaw—and I think they were using the figures that you gave the committee earlier of early or premature deaths in Wales

from pollutants, and, looking at the excess discovered by the court case in the European Court of Justice, they estimated that the pollution from Aberthaw was responsible for curtailing the lives of 67 people in Wales every year, equivalent to 64 per cent of the death toll on Welsh roads. I just wondered, from the witnesses, whether you recognised those figures or accepted them as a reasonable estimate of the cost of the operation of Aberthaw at the moment. We'll start with you—I've been asking you questions, but others may want to come in on this.

[23] **Ms Moore:** What I would say is that when we vary a permit or when we issue a permit, as we're not health professionals, we ensure that we consult with Public Health Wales to provide us with the advice that we would need to ensure that the permit is—

[24] **Simon Thomas:** And has that happened in this case?

[25] **Ms Moore:** That would have happened in this case when the permit was originally issued.

[26] **Simon Thomas:** So, that needs to re-happen now with the reissuing.

[27] **Ms Moore:** When we vary the permit, we will ensure that we consult with Public Health Wales.

[28] **Simon Thomas:** I don't know if I can invite you, because you gave the figures earlier, but I just wondered whether that squared up with what you told the committee earlier.

[29] **Mr Willis:** Those figures will be based on the health impact of the particular pollutant emissions, and if that's how the emissions from Aberthaw map to the excess deaths—. I'm not familiar with that particular case, but I guess that's how they will have been calculated.

[30] **Simon Thomas:** I believe that is how they were calculated, yes.

[31] **Mark Reckless:** Conceptually, would it be—? It was 67 extra deaths—

[32] **Simon Thomas:** Sixty-seven, yes.

[33] **Mark Reckless:** Would that, conceptually, be within the 1,150 or the 1,250 you mentioned for nitrogen dioxide and particulates earlier?

[34] **Mr Willis:** Yes, because the figures I gave were for the whole of Wales, so that will have been extracted for that particular case.

[35] **Simon Thomas:** I believe these figures relate to nitrogen oxides, not particulates. I don't think it's the particulates.

[36] **Mark Reckless:** So, would I be right to infer from that that the contribution of Aberthaw to our carbon dioxide emissions would be a much higher proportion than it would be to the nitrogen dioxide and particulates that you're emphasising the health risks of in what you said now?

[37] **Mr Willis:** I'm not sure on the carbon dioxide emissions, to be honest. Can you comment on that?

[38] **Ms Moore:** I don't have the information at my fingertips, unfortunately.

[39] **Mark Reckless:** Can I bring in Jenny Rathbone, please?

[40] **Jenny Rathbone:** Now that we've got the Well-being of Future Generations (Wales) Act 2015, to what extent do you think policies are being integrated between local authorities, public services boards and other organisations that have a duty to tackle air pollution?

[41] **Ms Moore:** The public services boards that you mention have been in place since the start of the financial year, and this is a really good opportunity to ensure we get that integration across local authorities, ourselves, public health boards and local health boards, so that things like air quality are considered. I think this is a really good opportunity, particularly for those sources that are more diffuse in nature. Certainly, regulation has been in place for things like heavy industry, which has shown a demonstrable decrease in things like nitrogen dioxide and sulphur dioxide since the 1970s. But, for those other sources that are more diffuse in nature, such as from transport and from domestic sources, this will be an opportunity to get the right people around the table to make sure that things are looked at a local level in relation to area statements, for example, and that the right things can be put in place to try and meet those requirements.

[42] **Jenny Rathbone:** So, when we're planning major new projects like a new hospital at Cwmbran or the siting of a new school—not next to a major road, one hopes—to what extent do all the parties that need to be involved

actually get involved at an early stage to avoid disasters?

[43] **Ms Moore:** I don't know if Peter wants to come in on that point from a local authority perspective.

[44] **Mr Oates:** As a local authority officer, as an environmental health officer, we are certainly consulted on all such major plans and then we would require certain conditions to be imposed. For example, the hospital in Torfaen, which is my borough, required an air quality impact assessment to be performed prior to permission being given and also a health impact assessment of what increases of emissions would be from the plant associated with the hospital. Again, for a school, we would be looking for impact assessments, if necessary, certainly if they were by a major road, and we monitor close to schools whenever possible as well to see what the levels of pollution are from traffic.

[45] **Jenny Rathbone:** Okay, but it hasn't happened in the past, because I've got two schools sited next to an area of unacceptable levels of air pollution, and probably a lot more as well. So, exactly how we—. Having done these assessments, what then happens? Are the public transport routes put in so that we can ensure that people can get to places that are going to be regularly visited because of the service they're providing?

[46] **Mr Oates:** Hopefully that would be done.

[47] **Jenny Rathbone:** 'Hopefully'?

[48] **Mr Oates:** Yes. I'm just one cog in this wheel.

[49] **Jenny Rathbone:** Fair enough.

[50] **Mr Oates:** I make my opinions clear to the planners and hopefully they take that on board as part of the permission that's given. There are conflicts there sometimes, for example, if you're looking for a new housing estate, because there's a requirement for new housing, yet that housing estate has an effect on increasing traffic on a particular road, so then a balance has to be found between the need for that housing and the inevitable raising of levels of road pollution in those areas.

[51] **Jenny Rathbone:** But the future generations Act is about joining this up. We shouldn't be allowing any housing unless it's got transport links

involved.

[52] **Mr Oates:** Absolutely. I welcome the future generations Act and hopefully that will help—

[53] **Jenny Rathbone:** But, once again, you're talking about the future. Have we got any good examples at the moment of where people are doing things differently because of the urgency of tackling air pollution? That's not specifically to you, necessarily, but to other members of the panel.

[54] **Ms Moore:** What I would say in terms of the public services boards is that they are still in the process, as they've only been established at the start of the financial year, of bringing the information together. Under the Environment (Wales) Act 2016, we have a responsibility—Natural Resources Wales has a responsibility—to put forward area statements that will use some of the information from the State of Natural Resources Report, which will allow localities to consider that environmental information, such as air quality, as part of their considerations in the public services boards. That report was produced in September, so now is the time to be looking at that. Also, there's a consultation that Welsh Government has put out in terms of the national policy statement in relation to the environment Act, which will also help in terms of the thinking process for public services boards.

[55] **Jenny Rathbone:** What role do you have, if any, in ensuring that planning authorities are aware of the importance of air quality and planning to ensure that we're not creating new problems rather than designing out existing pollution?

[56] **Ms Moore:** Certainly, we're not responsible for the monitoring of air quality. That sits with Welsh Government and also local authorities. So, that information would be available, and is available, on the webpages and so on for those considerations to occur. We are a consultee with regard to planning applications, and therefore we will put forward our information that we have to help in terms of that thinking process.

[57] **Jenny Rathbone:** Are there any evidence gaps in terms of ensuring that public services boards and all the parties involved are clear about the implications of taking a particular decision?

[58] **Mr Oates:** I think that, at the moment, speaking from my authority's perspective, there's been an information-gathering period that's going on

for the review of what we do, and the public services board has been bringing in both professionals like myself and also residents of the borough and finding out where those health inequalities lie, and where they're exacerbated by things like pollution and noise as well, which is being looked at. So, we have been providing the boards with information for them to make that review, and to identify where there is a need for closer working between local authority departments to mitigate potential problems before they arise.

[59] **Jenny Rathbone:** How long have you been doing this sort of work?

[60] **Mr Oates:** This has only been going on, I would say, for the past six months.

[61] **Jenny Rathbone:** Okay, so this is new. So, in the past, this has never happened before.

[62] **Mr Oates:** Nothing like the work that's being done towards the well-being Act, no.

[63] **Jenny Rathbone:** Okay. All right, so the jury's out at the moment then. Because I'm not hearing anything terribly reassuring in terms of how we're going to prevent future disasters happening in terms of the well-being and the health of children, for example.

[64] **Mr Willis:** I think the evidence in terms of the air quality measurements and the infrastructure that's put in place under the local air quality management regime is all there in terms of understanding air quality. We have the evidence we need to know where the problem areas are; it's just a case of, as Peter said, joining things between the environmental health officers and the planners to make sure that air quality is the primary concern when those new developments are going in to an air quality management area and that those concerns are heard—and they aren't, always, at the minute. I think that's fair to say.

[65] **Mr Oates:** What's become clear from the involvement I've had is that we do need greater integration in local authorities between planning, highways, environmental health, countryside and the people in charge of green infrastructure. And by working together more closely, then we'll work better.

[66] **Jenny Rathbone:** Okay, but local authorities should be aware of the

environment Act, the active travel Act and the well-being of future generations Act; what more do we need to do to ensure that we've got joined-up decision making to really tackle air pollution, which, as we've already heard, kills far more people than road traffic accidents?

[67] **Mr Oates:** I think working towards progressing the well-being Act is going to force local authorities into situations where we will have to work better and in greater partnership with each other. This is going to expose where those partnerships are weak and, hopefully, the Act will force us to strengthen them.

[68] **Mark Reckless:** Peter, looking at this joint partnership working, I was interested—I think you said earlier that when the Aneurin Bevan health board is doing a specialist critical care centre, it then has to go to you as Torfaen borough council to do the health impact assessment of building a hospital. How did that work?

[69] **Mr Oates:** We require various studies to be done, for example a health impact assessment or an air quality impact assessment. It wouldn't be us who would be doing those; they'd be the consultants acting on behalf of the developer. And then—

[70] **Mark Reckless:** But, conceptually, how do you do a health impact assessment for building a big new hospital?

[71] **Mr Oates:** Well, you are looking at where health can be affected by that building. So, you're introducing additional traffic, for example, into the road network around that building, you are taking away some land as well. There are the residents who are already living there. The health impact could be for any major development—say, an industrial development as well. It's not really about the health of the hospital itself, it's the effect that will have on the health of the existing environment and the residents in that environment.

[72] **Mark Reckless:** Okay. Back to Jenny.

[73] **Jenny Rathbone:** So what you're saying is we spend millions of pounds on an ill-health facility, a hospital, but we're going to blithely ignore the fact that we're going to create new traffic, rather than putting in the public transport links to ensure we don't create more traffic.

[74] **Mr Oates:** They're exactly the things that a health impact assessment

would highlight, I think: the need for an increased green infrastructure around that area, a need for new traffic routes and cycle routes, things like that.

[75] **Jenny Rathbone:** Well, I'm sure your professionals are putting those points, but the point is are they being heard and is the rest of the public sector mitigating against increasing the air pollution problem?

[76] **Mr Oates:** That's a good question.

[77] **Mark Reckless:** Can we have a south Wales metro stop at the SCCC, please?

[78] **Mr Oates:** I'm sorry, I didn't hear that.

[79] **Mark Reckless:** Can we please have a south Wales metro stop at the SCCC as well as having road accessibility on the edge of Cwmbran?

[80] **Mr Oates:** That's an excellent solution.

[81] **Jenny Rathbone:** Have you put that in your paper? [*Laughter.*]

[82] **Mark Reckless:** I wonder, could I perhaps request Torfaen council to send a copy of that health impact assessment to this committee? I think we'd be interested in looking through how you did that assessment. Jayne.

10:00

[83] **Jayne Bryant:** It was on the back of that; it's just a quick question: I wanted to talk about that one example of the hospital. We're looking at the health impact assessment there, but does it also take into account, for example, with the hospital, the fact that there would be more people moving from an area—say, for example, in Newport, the Royal Gwent? Does it take into account the health impact of people who will be, hopefully, better off from a hospital moving somewhere else as well, if you understand what I mean?

[84] **Mr Oates:** It looks at all pros and cons.

[85] **Jayne Bryant:** So, it would look at that idea as well. Brilliant.

[86] **Mr Oates:** It balances them, yes.

[87] **Jayne Bryant:** Great, thank you.

[88] **Mark Reckless:** We'll tackle the well-being of future generations Act and its implications, but one specific question on the national indicator on nitrogen dioxide: Paul, you were saying to us earlier that evidence on nitrogen dioxide had only come more recently and that you're particularly concerned about the small particulates. Is it appropriate to have just the nitrogen dioxide as the indicator for the Act or should we be supplementing or replacing that with the small particulates you described?

[89] **Mr Willis:** There was a consultation on the indicator, it was widely discussed at the Welsh Air Quality Forum and it was agreed that nitrogen dioxide had the most evidence available to provide that indicator. Nitrogen dioxide is probably measured at the largest number of locations across Wales and therefore that provided the most robust evidence to produce that indicator. That's the reason why.

[90] **Mark Reckless:** Can I bring in Huw?

[91] **Huw Irranca-Davies:** Could I just pick up on that, both in terms of the minutiae of the plans and what is being monitored, but also how that's reflected in the air quality strategy at a UK level? There has been criticism, not least from the Environment, Food and Rural Affairs Committee at the UK Parliament. They gave a bit of a drubbing to the Parliamentary Under-Secretary of State for her evidence to that committee. In fact, she acknowledged that there was more to be done. Do you think that these issues of the wider air pollutants should be reflected more, and not simply in the monitoring—because as Paul Willis has said, we have the evidence and we're monitoring it—but actually in the strategy, as well as the plans on what we need to tackle?

[92] **Ms Moore:** There's been a recent consultation by Welsh Government, looking at local air quality management, and within that there are proposals for when the reporting occurs for local authorities as to whether or not they need to declare an air quality management area and then the plans that are in place once they've declared, and that also, those local authorities that are going through the process of making that assessment—that not only should they consider the eight pollutants that are within the air quality strategy, but in particular that they should focus on the PM2.5s and PM10s and also

nitrogen dioxide. If those are seen to be the most important, then those are the things that should be reported on an annual basis.

[93] So, the consultation closed at the end of December, and I understand that Welsh Government officials are considering the responses to that. But certainly there seems to be implied from that there needs to be a recognition of those more concerning pollutants.

[94] **Huw Irranca-Davies:** So, can I ask what implications that has for the overall UK air strategy, which I think dates back to 2007? Is it now fit for purpose? What you're saying there is that what we're doing on the ground at a Wales level and in a local authority is actually running well ahead of what's in the air quality strategy. Should we just discard that now and say, 'Well, that's irrelevant; we're doing better stuff on the ground'? Does that need to be updated?

[95] **Mr Moore:** That proposal is linked to the air quality strategy, so the air quality objectives and limits that are contained within that strategy are based on the health information that has been considered on a European and World Health Organization level, and those objectives and limit values are set to meet those requirements. So, the proposal in the consultation, as I understand it, is really to allow local authorities to focus their resources on the ones that they deem to be most important, as set out within the overarching strategy.

[96] **Huw Irranca-Davies:** Tell me if I'm mixing up apples and pears here, but when the EFRA committee called, in December, for a comprehensive air quality strategy, containing priority measures to protect the public from the invisible threats of air pollution covering all of the aspects from all sectors—all air pollutants—John Hayes replied that it may be better to develop a more comprehensive strategy covering all those pollutants from all sectors. Am I missing something here? Because he seems to be acknowledging that a strategy is needed now that broadens the remit to cover all of those air pollutants in all the sectors.

[97] **Ms Moore:** As it currently stands, there are eight pollutants within the air quality strategy, which is on a UK basis. So, I guess it would be for Welsh Government to consider, in light of that evidence and also the evidence you provide, as to whether anything further needs to be undertaken.

[98] **Huw Irranca-Davies:** Okay, thank you for that. We've touched on the

issue of legislation, as well, that underpins this. Does anybody feel that there is any need for any further legislation? Or have we got all the tools that we need?

[99] **Mr Oates:** I think the legislation is satisfactory. I think that local air quality management could be changed and improved within the existing legislation. I thought a colleague, Huw Brunt, might be here from Public Health Wales, but I can't see him. I know what he would say: that although we have limits for pollutants such as oxides of nitrogen, there's no safe level of those pollutants. To have an arbitrary limit where—. For example, if you take the air quality management area in Hafodyrynys in Caerphilly, which is a terrible area, the population exposure—the level of population there—is fairly small, whereas you may have a conurbation that is exposed to a level that is below the limit, but has got a higher level of population. So, shouldn't we really be looking, instead of having these arbitrary limits, at population levels of exposure, as opposed to where somebody said 'Well that's the line there'? Well, that isn't the line, really—we know there's no safe level.

[100] **Huw Irranca-Davies:** I only have one final question, and it relates back to the UK strategy, again. One of the things that, in more recent years, has come onto the agenda is the issue of indoor air pollution. Should that feature within the strategy? Because it currently doesn't.

[101] **Mr Oates:** That's a very tricky one to enforce—you're looking at people's lifestyles—

[102] **Huw Irranca-Davies:** It is a very tricky one. As you know, it's been observed that, if you're in somebody's living room underneath the Heathrow air flights, or alternatively alongside the Old Kent Road, or alternatively, in a Wales concept, in the Hafod or wherever—. Is there something—? What's your expert feeling as to whether this should now be included?

[103] **Jenny Rathbone:** Westgate Street, in the city centre of Cardiff, has very high levels of air pollution because of all the buses. So, should we be monitoring what all those residents are breathing in?

[104] **Mr Oates:** There's no current process for doing that. I think that that possibly could be done on a project level, just initially, to see what we'd be up against, and how that might be feasible. Obviously, people's lifestyles come into play there as well and also housing quality is an issue, because of poor quality housing and the air quality that that causes, in terms of damp

and mould and spores and thing like that. So, that's quite a gnarly subject.

[105] **Huw Irranca-Davies:** It is. It's interesting you touch on a project approach to this, and maybe that is a way to do it. The other aspect here is more open-source monitoring, which is an innovative new field where you set up a network of people who self-monitor. It does have a value. It's not the same as an authority-led approach to monitoring, but it could help us in understanding what's going on with indoor air quality as well.

[106] **Mark Reckless:** It's become commonplace in major cities in China for families to have replacement filters, even—it's quite expensive—but, essentially, having machines in people's living rooms that filter out at least some of these particulates. Is the problem actually so severe in Wales, despite the efforts of various organisations, that that's something, for people in high-pollution areas, you would recommend they do? Anyone want to comment on that?

[107] **Mr Oates:** If you take an intelligence-led approach to that and get the data first and see whether there's a problem that needs addressing, like, say, a project, it could be applied by identifying an area where you think there is a problem, see if there is a problem, and then asses means of dealing with it.

[108] **Mark Reckless:** We've referred to one area in Caerphilly. I just wonder if some of our constituents have an expectation that Government will act to protect them at least from the highest levels of exposure. Where it fails to do that, should we not, as Government, be looking to support these types of interventions, which might at least mitigate the exposure for people in their living areas?

[109] **Mr Oates:** I think that's worth pursuing.

[110] **Mark Reckless:** Can I go to David Melding, when he's ready.

[111] **David Melding:** I'd just like to look at the air-quality approach. I want to ask a fundamental question, really, because it seems that current planning is around identifying those areas of high risk and then putting strategies in place. But we know that there are more health impacts in areas—in the totality, anyway—that occur outside those key, high-risk areas. I just wonder if our approach shouldn't be a general one followed up by more in-depth action in those high-risk areas.

[112] **Ms Moore:** Again, the Welsh Government consultation, out just before Christmas, asked a very similar question in terms of this recognition that there needs to be reduction of pollutants to meet the objectives or the limit values, but that perhaps the proposal should be to consider how air quality can be looked at to be reduced in its totality. Certainly, the proposition there, under the local air quality management scheme, was for local authorities, as part of that, to be reporting, potentially, on an annual basis, not only with regard to the specific hotspots, or where monitors are currently in place, but what could be done for the totality of the location.

[113] **David Melding:** Any other views?

[114] **Mr Willis:** At the European and national level, there is a population exposure reduction target for PM2.5 particles measured at background locations across the country. That responsibility has not yet passed down to the local authority level for PM2.5, so that's a target that is assessed at the national level, with relatively few numbers of monitoring stations for that particular pollutant. As we said earlier, PM2.5 is one of the real concerns in terms of health impact.

[115] **Mr Whitfield:** I think it's useful to comment that ammonia, which is principally from rural sources—agricultural livestock production—is a significant contributor to background PM2.5. So, if you're looking at more diffuse sources at regional levels, then it's important to consider that source and that pollutant.

[116] **David Melding:** To take this further, given that our current strategy, which has been in place since the early 1990s, has been to identify high-risk areas—. Of the 40 air quality management areas, I don't know if any have ever been revoked—very few have. [*Laughter.*] You know, we don't seem to be terribly successful, do we, with this approach?

10:15

[117] **Mr Oates:** It's very difficult in some areas to find something that works. We're fortunate in Torfaen not to have any, but certainly, on the Welsh air quality forum, we discuss these and the ones that do exist in Wales. My colleagues tell me—. We have our meetings with all the stakeholders, we have our action plans and we try and come up with a strategy to reduce the levels in these air quality management areas so they're below the stipulated limits. But, at the end of the day, there's only so many things you can do

when you have a situation that is already pre-existing through the architecture, the road network, and the amount of people on that road network. Unless you have the money to do something like precinct St Mary Street, which is isn't possible, say, in the centre of Usk or Hafodyrynys, what are you left with? What are the tools in your box to deal with those breaches? In Hafodyrynys, it almost seems like the cheapest way to get rid of that air quality management area would be to buy the houses that people live in there and move them somewhere else, and get rid of the receptors. As ridiculous as that may seem, it's probably the cheapest way to deal with that area. So, we are frustrated, as environmental health officers and air quality professionals, in the tools that we have to deal with existing problems.

[118] **David Melding:** It's interesting, actually. I think it's useful to raise something as profound as that. It's not very practical, obviously, but at least you are confronting people with the sorts of choices that they would have to make if we were to get real change. I mean, I would rather look at the whole issue of traffic management, because it does seem to me that most of these areas remain in this category because of congested traffic, over-use of cars and a lack of public transport options and such like. At least then you would be giving politicians a chance to—. You know, if it's important to identify these areas and say we should have plans to improve air quality, then these are some of the things that have to be considered in the public space.

[119] **Mr Oates:** I'd agree.

[120] **Jenny Rathbone:** Chair, could you just explain what is the cause of the very high levels of pollution in Hafodyrynys?

[121] **Mr Oates:** It's kind of a perfect storm, really, of having a canyon effect of houses, so that the pollutants don't disperse particularly easily. So, there is a very steep hill with a junction at the bottom, and it has a lot of heavy goods vehicles driving up there at certain times of the day, when it gets very congested. And so you get diesel vehicles with heavy loading on their engines going up a hill in a canyon effect of houses. That's a kind of similar situation that we see in many air quality management areas in Wales.

[122] **Jenny Rathbone:** Okay, so short of buying up all the houses and finding somewhere else for these people to live, there is no other solution.

[123] **Mr Oates:** It's very difficult without creating an extremely expensive bypass to the area. Yes, I mean, the options are very limited in situations like

Hafodyrynys.

[124] **David Melding:** But plans ought to be presented: you know, if you want to change within five years, X, Y and Z would need to be done, or a 10-year or 20-year plan, or whatever it is. Because these areas have been identified for decades. It's not as if we've suddenly realised this. I'm not sure what the value is of us as politicians discussing these things is if you never get to the fundamentals. We may not make the choices then, but at least we are faced with them.

[125] I'd like to move on now to the Welsh Government's consultation on local air quality and noise pollution as well, and just ask for your reflections, you know, on what seem to be the core elements in this consultation. I'd appreciate your views on the advisability of these, and if you have got any further knowledge of the consultation responses, that would be helpful as well, but you may not have that. The Welsh Government is examining a more streamlined system. I think one of you has already referred to reporting limits that are likely to be changed from three years to one year. Local authorities combining on their reports—that's interesting; both to produce more effective reports and perhaps to limit the range of evidence and be more selective. The Welsh Government has come out with a template for these reports and is—you know, perhaps reflecting on my first question—looking at wider areas with the objective of achieving better health outcomes generally. How is that consultation going? Again, is the outcome going to be some pretty precise recommendations in terms of what needs to be done if we are going to get real change?

[126] **Mr Oates:** From an officer's perspective, the consultation's being considered by all-Wales expert panel, which is part of the Welsh heads of environmental health group, and they've issued a detailed response from that group to the Welsh Government. Certain things were welcomed—I have it here. I can't summarise the response very quickly, but, for example, collaboration between authorities on writing their reports is welcomed, and certainly from a Torfaen prospective, where we work in partnership with Blaenau Gwent now on environmental health and those public health services, it's likely that we will combine our reports and that's going to reduce some of their resources burden slightly. And other specific questions in that consultation are welcomed within our response. We are a little bit iffy about the penalties for late reporting because there are many and varied reasons why that happens. And we think there should be a bit more leeway there. I can let the committee have a copy of this.

[127] **David Melding:** That would be useful.

[128] **Mr Oates:** It's available to copy now or I can send an electronic copy.

[129] **David Melding:** Do any of the other witnesses have any comments on this?

[130] **Ms Moore:** Our role with regard to local air quality management is limited from a monitoring perspective, but clearly we'd be part of the public service boards in terms of provision of information. One of the roles that we do have in terms of supporting local authorities is that whatever information that we do have from an industrial perspective we are able to submit, so that local authorities can consider. And also, we offer modelling services so that some of the flow and impact of air quality pollutants can be considered.

[131] I think it's helpful that there is that section at the end of the consultation that asks whether there's anything further that could be considered with regard to improving air quality. And certainly, in terms of—there's domestic legislation and European legislation, and it may be something in the longer term to consider how that comes together in some ways, so that you have one single piece of air quality legislation for Wales.

[132] **Mark Reckless:** Hasn't domestic and European legislation promoted the use of diesel cars? They went up, I think, from 10 per cent to 50 per cent between 1995 and 2012, according to the Society of Manufacturers and Motor Traders. And I understand that was driven by concerns about global warming and carbon dioxide emissions. Gordon Brown said in 1998:

[133] 'diesel cars should attract less vehicle tax than their petrol equivalents because of their better CO2 performance'.

[134] Isn't that, to a significant degree, what has driven the problems that we've been speaking about this morning?

[135] **Ms Moore:** It's very difficult for me to say, because our remit doesn't relate to transport. It's purely in terms of the regulation of large industrial sources. It's hard for me to have a view as to whether the legislation is right for transport.

[136] **Mark Reckless:** Perhaps our other witnesses could comment.

[137] **Mr Willis:** From my perspective, that's absolutely the biggest problem in delivering improvements in local air quality. With hindsight, that was a big mistake—to promote diesel vehicles in that way. The expectation was that the technology that was put in place to reduce the particulate emissions would solve that problem, but the unexpected consequence was the additional nitrogen dioxide emissions, which is not factored into these long-term plans that have been put in place.

[138] **Simon Thomas:** Plus the manufacturers lied to us, didn't they?

[139] **Mark Reckless:** Huw and then Jenny. Sorry, Jenny, Huw had indicated.

[140] **Huw Irranca-Davies:** Can I simply add to that that I think there was a consensus at the time that the focus would be on climate change, and this was a useful way of doing it—20/20 hindsight is wonderful to have, but the evidence has changed as well significantly, and as Simon picked up on, there is manipulation of the data as well. But now knowing what we do know, if I flip the Chair's question round, isn't this now a clarion call? If transport—heavy transport, light transport, commuter transport et cetera—is one of the main contributors, surely, as part of the way forward, on local plans but also as a Wales-wide strategy, we have to change radically our views on moving people around the country. I've come in today by train and cycle: two different modes there. I could've driven up and added to all the—. Surely, that's going to be some of the issues around planning, development—some hard choices for saying to people, like some institutions have done, 'We're not building car parking spaces; you're going to have to travel in by rail' or whatever.

[141] **Mr Oates:** Yes, I'd agree, and I think it's for local authorities and institutions to initially start looking at their own fleets and their own procurement of diesel vehicles. When they're looking to change their fleets, then this should be a massive consideration.

[142] **Jenny Rathbone:** So, what focus is there on changing our public transport system, both trains and buses, to clean vehicles? Because that, surely, is a major contributor to air pollution.

[143] **Mr Oates:** I don't have any answer to that, sorry.

[144] **Jenny Rathbone:** Has anybody got any good examples of things that

we might encourage others to follow? Certainly London is saying they're going to switch to green buses.

[145] **Mr Willis:** Yes. With the new plans to implement clean air zones, then part of the implementation of a clean air zone would be the requirement that any vehicles within that clean air zone have to meet certain emissions standards, and there's an infrastructure for those clean air zones to be set up. Within the new national plans, there will probably be more required clean air zones in cities, including—the DEFRA lawyer mentioned south Wales; it's yet to be clear how that will be implemented. But those clean air zones are one method of ensuring cleaner vehicles in city centres.

[146] **Mark Reckless:** Simon.

[147] **Simon Thomas:** Yes, I just want to ask a specific question while we're on here. Obviously, we've had evidence as well, and we're aware that several cities have talked about banning diesel completely. But I've also seen evidence that one of the problems, apart from heavy goods vehicles, is idling diesel vehicles, because they leave their engine running to keep the various accoutrements that are needed for delivery vehicles these days: your satnav has to run, your electronic devices, so everyone leaves the engine running—taxis, delivery vehicles and so forth. That can be dealt with within an urban environment. As it happens, there's a company in Wales that provides an electric battery storage solution that allows diesel vehicles not to idle, and that's been sold now into London as part of their way of dealing with clean air. So, are there intermediate technologies that we should be moving to immediately in order to address this? Because, clearly, we're not going to clear away 50 per cent of our vehicles overnight. We have to recognise our own problems here. We're speaking here at the National Assembly: we don't have an electric charging point here for the Assembly. It's very basic stuff that we should be doing ourselves. I don't suppose you would want to comment on that; I'm saying that in order to incentivise ourselves to do better. But around cities in particular—large towns—trying to tackle this diesel problem in an intermediary way, are there technologies we should be using today?

[148] **Mark Reckless:** Anyone want to answer that?

[149] **Simon Thomas:** I suppose that's local, really.

[150] **Mr Oates:** We're the same in Torfaen. We don't have an electric

charging point, and I think it's a shame. I think that if we want to encourage uptake of greener technology, then the infrastructure has to be provided to support that.

[151] **Mark Reckless:** It's not a very complex technology. We're talking about 'infrastructure' as if an electric charging point is some huge investment of complexity to put in. They're fairly simple things. I can't really ask you why we don't have one at the Assembly, but I can ask you why you don't have one at Torfaen council.

[152] **Mr Oates:** I can't answer that, sorry.

[153] **Simon Thomas:** We will have one soon at the Assembly, I should say, because I've been working on it.

[154] **Mark Reckless:** Good. Can I refer to Jayne? We've trodden all over the questions we had agreed you were going to ask, but I wondered whether you might have any follow-up in this area.

[155] **Jayne Bryant:** That's fine. Thank you, Chair. On the back of the question that Simon's just asked, actually, because I live in a city that has a motorway that runs right through it, perhaps you can explain a little bit about the dangers of standing traffic and the dangers around the air quality for people who live quite close to a road that has, very often, on a daily basis, standing traffic.

10:30

[156] **Mr Oates:** Standing traffic and idling traffic are a big contributory factor to air quality management areas in the areas that we've discussed already, Hafodyrynys and Usk. Traffic congestion and the idling of diesel vehicles is a big part of why those limits are being breached.

[157] **Jayne Bryant:** Does somebody else have any comments on the health impacts of idling traffic?

[158] **Mr Willis:** I can only agree with Peter. If major roads are passing through an area where people are exposed because they're going about their day-to-day business then that's a big problem. I think that we're all aware that that is the case.

[159] **Mark Reckless:** Can I ask witnesses a final question? We've spoken quite a lot about pollution and air quality and the impact on human health. Are we giving enough consideration to the impacts on nature, wildlife and biodiversity? We've got the SoNaRR process. What should we be doing to integrate air quality issues into that, or are they not the same degree of concern for wildlife as for humans?

[160] **Ms Whitfield:** Well, as an adviser on nature conservation, I'd say it's extremely important that we protect our biodiversity and our natural resources from air pollution, and there are widespread impacts, as I said at the beginning. I think, in terms of the solutions, it's important to realise that the same pollutants are causing problems, albeit the sources and dispersion/exposure patterns are different. So, I've mentioned ammonia a couple of times already—a key source of secondary particles to PM2.5, but also a significant contributor to nitrogen deposition. So, I think attention needs to be put on that as well as, more obviously, nitrogen oxide, et cetera, including nitrogen oxide in terms of it being the precursor gas to ozone as well.

[161] Obviously, I come from the UK perspective, but my understanding of the Welsh well-being goals, and thinking about those goals—. In terms of the natural environment, it does have an impact on the resilience of natural resources and the benefits that humans derive from those, and I think it's worth exploring that more, and looking at those impacts and where there could be co-benefits for human health and the wider environment.

[162] Also, in terms of ammonia and farming, emissions of ammonia from farming represent a loss to farmers in respect of nutrients. If it's contained within the farming system it's fertiliser for free, so any losses of ammonia from the system are a cost to farmers, and retaining it in the system is a benefit to farmers. So, it would be interesting to look at how you can reconcile the desire for more agricultural productivity with the risk from increasing ammonia, but also to realise the win-wins you can have for the farm and the natural environment.

[163] **Mark Reckless:** Isobel, this committee has been quite complimentary about the SoNaRR initial report that NRW put together on a tight timescale, but I wonder, for future reports, is there scope for integrating air quality more into your assessment of wildlife and biodiversity?

[164] **Ms Moore:** Certainly, those aspects are covered, and we'd look to

include them in the future and give them a focus. Some of the things that were looked at were in relation to nitrogen deposition, and also acidification from sulphur dioxide. The other thing that I wanted to mention that we do as an organisation is that, when we do permit our installations, our heavy industry installations, we consider them with regard to the habitats directive, and also ensure that they're protective with regard to those requirements. And, obviously, we've got things in place in terms of looking at nitrogen deposition, and a programme under the LIFE scheme in terms of looking at action plans for nitrogen deposition for the future. So, certainly, we will make sure that SoNaRR continues to cover those elements.

[165] The other thing that I also wanted to mention is that some of the EU limit values do have specific ones for vegetation on them. So, there is an element of that being considered as part of those European requirements.

[166] **Mark Reckless:** Thank you. I'm grateful to witnesses. We have a second panel, including Huw Brunt, who will be joining us—if I could thank you very much for your contribution today, and declare a 10-minute break for Members before our next panel. Thank you.

*Gohiriwyd y cyfarfod rhwng 10:35 a 10:48.
The meeting adjourned between 10:35 and 10:48.*

Ansawdd Aer yng Nghymru Air Quality in Wales

[167] **Mark Reckless:** Bore da. Thank you for joining us. I understand you were able to catch some of the previous session from the gallery, although not the beginning. I'm not sure, Huw, whether you caught the reference, I think from Peter from Torfaen, who upbraided the committee on why we didn't have Huw Brunt on the panel, so I'm pleased you're now with us. [*Laughter.*] Can I first—? Trying to understand the health impacts of air quality, we had a discussion around the smaller particulates and nitrogen dioxide. I wonder, from the public health perspective—and then, specifically, I know the lung and pulmonary impact is very important—can you clarify to the committee what you now see as the major issues, and where we should be focusing our efforts from a public regulatory standpoint, given your assessment of the public health risks and impact.

[168] **Mr Brunt:** From a public health perspective, you've probably already

heard this morning about the impact, or the estimated impact, of air pollution in Wales. The usual figure for the UK—the one that's quoted—is around 29,000 deaths equivalent that are attributed to certainly those fine particulates. The figure in Wales is obviously smaller, but still a preventable 1,600-ish equivalent deaths for fine particulates, and just a smaller number of 1,100-ish, from our calculations, for nitrogen dioxide. Those two pollutants, from our perspective in a contemporary context of local air quality management, are our primary concern, and, actually, those two pollutants are the ones we can do something about. There are other public health concerns associated with ozone exposure, but they fall outside of the local air quality management regime. I should say, as well, that Public Health Wales is actively engaged with the Welsh Government, local authorities, Natural Resources Wales and other key players to try to enhance that statutory regime to try and tackle those issues at that local level. I can explain a bit more about that in due course, perhaps, but, from a public health point of view, we are concentrating our efforts on those two pollutants.

[169] **Mark Reckless:** Mr Carter.

[170] **Mr Carter:** Thank you. Thank you for the opportunity to come, and it's great to have the committee interested in this area. I was particularly humbled, I suppose, actually, to have questions about lung health asked in the last session, and the panel answered them very well. From our point of view, I think it's been a challenge for a number of years to raise the profile of air pollution as being a contributor to lung health issues outside of London. I think there's been a perception that it is very much a London problem, so to actually have it on the agenda here in this building today is very useful for us.

[171] The key thing we're keen to get across is that it is a problem for people with pre-existing lung conditions, certainly the 71,000 people with chronic obstructive pulmonary disease across Wales and the 222,000 with asthma. It's a huge problem for their ongoing lives and well-being, leading to asthma attacks and COPD flare-ups. But, for those people without a pre-existing lung condition, there is a growing body of evidence to suggest a link between the nitrogen dioxide and the particulate matter eventually contributing towards those lung conditions. So, those are things we're keen to explore, and, crucially for us, it is preventable, and there's a range of things that are obviously outside the scope and competence of this institution, and are an UK-wide ask, or possibly and European ask for the

time being. But there are things that could be done by the Welsh Government, so we're really grateful for the opportunity to raise these issues today and, hopefully, put this on the agenda.

[172] **Mark Reckless:** I was very struck by the recent, very large Ontario study that linked air pollution, or at least living close to a major road, to significantly greater levels of dementia. I just wonder, on the health impact, as you're the British Lung Foundation, but that cause of dementia or link, is that presumed to be because small particulates are coming into the bloodstream through the lungs?

[173] **Mr Carter:** That is my understanding. Huw might want to comment on that further, because dementia isn't an area of my speciality. But the key message is the same: that the challenge is that particulate matters are of varying sizes and that, particularly, the smaller they are the more easy it is to pass through to the bloodstream, and I have seen that study. In our case, obviously, our concern is the particulate matter building up and damaging the lungs on an ongoing basis. We know it's particularly damaging for small children, keeping their lungs smaller than they need to be, and we know there is a causal link between smaller lungs and long-term lung conditions, but I couldn't comment on the dementia aspects. Huw might be able to.

[174] **Mark Reckless:** I know we have some young people and children in the gallery at the moment. You mentioned smaller lungs and the impact of air pollution on children can be greater and more damaging. I wonder, Huw, from the perspective, particularly, of schools, how good your understanding is of the health impacts of schools being sited close to heavily polluted roads and what, from a public health perspective, you are able to do about that.

[175] **Mr Brunt:** There are a couple of points, really, to pick up on there. The first one is around children and vulnerable receptors or vulnerable population groups, and there's no doubt that children, older people and those with pre-existing conditions are in that vulnerable category. The only other thing to add to that, before I go on to the schools issue, is the link between air pollution and multiple deprivation, which is coming through loud and clear now as part of the work that we've done in Public Health Wales to look at associations between that. There is this triple jeopardy, if you like, where air pollution, multiple deprivation and impaired health can exacerbate problems and create those inequalities.

[176] If we think about that in a community setting, obviously, that has an

impact on schools as well, and implications for schools. There's no doubt—there's been lots of research and studies undertaken in and around school environments, particularly those schools that are located in busy, congested areas, so, for example, on roads with junctions near them and also with cars and other vehicles, buses, idling outside of schools. There is the potential for air quality, certainly at different times of the day, at those peak times, to be of concern. But, in terms of quantifying that, it's quite difficult because we don't routinely have monitoring data to tell us what the air quality is like exactly at that school location or in the school yard.

[177] **Mark Reckless:** Shouldn't you be doing that, and not just in the school yard, but actually in classrooms, to see how much impact there is?

[178] **Mr Brunt:** Public Health Wales doesn't have a responsibility to monitor. Local authorities routinely monitor the air quality in their localities through the local air quality management regime. We would very much like to see more monitoring, because it informs the way that we work.

[179] **Mark Reckless:** Why can't you facilitate that? I mean, I understand it's now not expensive, particularly, to have monitoring equipment in schools, perhaps as part of a science project. If a school were willing to have monitoring equipment, are you not able to facilitate and co-ordinate just bringing those measurements together and using that to inform your work?

[180] **Mr Brunt:** Yes, we can, and we are starting to support that. There's a schools project at the moment, an educational project, with resources and diffusion tubes to measure nitrogen dioxide, which is being piloted at the moment in a couple of local authority areas. The resources are being made available by Ricardo Energy and Environment, and we are looking into how effective that might be as a measure to not only raise awareness in schools, but also to glean a bit more information about what the exposure might be at those schools. So, we're actively supporting that and we're engaged in discussion with local government and Welsh Government on how we can roll that out if it's effective.

[181] **Mark Reckless:** Thank you. Can I bring Huw in, and then Simon?

[182] **Huw Irranca-Davies:** One of the roles Public Health Wales does have, to my understanding, is the issue of raising awareness and, by doing so, effecting behavioural change.

[183] **Mr Brunt:** Yes.

[184] **Huw Irranca-Davies:** Not only in terms of schools, but I am interested in the specifics of schools, and their proximity to areas of high air pollution, but also the contributory effects of the actual to and fro to that school contributing to it as well, with parent drop-offs. And this is difficult—people have busy lives, they are concerned about the safety of their children, and they make decisions about how to get them there. What do you see as your role, as Public Health Wales, in articulating the messages behind exactly what you were saying about social justice, about areas of high deprivation suffering the worst, and so on? How do you do that? What are you doing to get that message across, and what would be your policy proposals for schools?

[185] **Mr Brunt:** To start with the general awareness raising, I was just explaining prior to coming in here that I'm on a bit of a crusade around this at the moment, to raise awareness internally within Public Health Wales. We started having those discussions with policy officials in Welsh Government because it is our intention to provide formally a resource for others to use, whether it's through these newly emerging public service boards, to communicate messages far and wide. We recognise that, through behaviour change, and if we can achieve some of that and get people more into active travel or sustainable transport, we are able to not just push a message, but actually public health then becomes part of the solution. It's much more difficult, obviously, to get through to some population groups in some communities, but we had agreement yesterday from the Minister and the chief medical officer to work with policy officials in Welsh Government to develop that resource. So, that will happen over the next couple of weeks, and we will agree a framework and push that out.

[186] That is happening, albeit in an ad hoc way at the moment, through health boards and through local public health teams. But what we want to do is make sure there is one consistent message based on fact and effective evidence-based interventions that we can then push out. That will need to factor in schools as well, and there may be a certain need for something more specific to tackle some of the issues in schools and what can be done.

[187] **Huw Irranca-Davies:** Well, just as a brief follow-up on that, there's one issue of the change of behaviour by gentle signals, making things easier and so on, and then there's the other aspect of being quite hardline and saying certain behaviours would not now be acceptable.

[188] **Mr Brunt:** Yes.

[189] **Huw Irranca-Davies:** Does Public Health Wales believe that because of exactly the factors you raise, not only around schools, but knowing the areas of population that it hits, there are more hard-nosed interventions that should take place?

11:00

[190] **Mr Brunt:** I think there are, and the recent consultation by the National Institute for Health and Care Excellence on outdoor air pollution and what works is an excellent summary of the evidence in this area, and I think that where we have the evidence base to say, 'Well, this works, make it happen', there's a role there for public health to advocate for that. How that actually comes about is another thing. But there are some areas where more work is needed and you may need to approach it in a gentler way, perhaps. But, yes, there is a distinction to be made between, 'This is tried and tested. This works, do it', versus, 'Let's try this, let's be innovative. There are certain circumstances that may dictate how things go in different areas. Let's try it, evaluate it effectively and then move on'.

[191] **Huw Irranca-Davies:** Interesting.

[192] **Mark Reckless:** Simon.

[193] **Simon Thomas:** Diolch, Gadeirydd, ac fe wnaif i ofyn fy nghwestiynau yn Gymraeg. Yn gyntaf oll, buaswn i jest yn hoffi deall ychydig yn fwy o ran yr effaith ar iechyd, o'r ffigurau hyn. Roeddech chi, Mr Brunt, wedi rhoi ffigurau sy'n cadarnhau beth oedd wedi cael ei ddweud yn y sesiwn flaenorol, hefyd, ynglŷn â marwolaethau cynnar o PMs, a nitrogen deuocsid yn ogystal. A ydy'r ffigurau yna'n ffigurau Cymreig, wedi eu gweithio mas o ran y sefyllfa yng Nghymru, neu a ydyn nhw'n *Barnettisation*, os liciwch chi, o

Simon Thomas: Thank you, Chair. I'll ask my question in Welsh. You should be able to hear the interpretation. So, first of all, I'd just like to understand a little bit more about the health impact, in relation to the figures that you mentioned. Mr Brunt, you mentioned a figure that confirms what was given in the previous session, but also with regard to the early deaths from PMs and nitrogen dioxide as well. Are those figures Welsh figures, having been worked out in the Welsh context, or are they Barnettised

ffigurau Prydeinig? Dyna'r cwestiwn cyntaf.

figures, as it were, of the British figures? That's the first question.

[194] Yr ail gwestiwn, sydd yn fwy i Mr Carter, efallai, yw: wrth ystyried effaith hwn ar yr ysgyfaint ac ar iechyd yn gyffredinol yng Nghymru, a ydym ni'n wahanol i weddill y Deyrnas Gyfunol yn lefel a chyfartaledd y clefyd ar yr ysgyfaint sydd gennym ni—COPD, a hanes diwydiannol, efallai—ac felly mae yna fwy o effaith o'r ffigurau yma yng Nghymru oherwydd iechyd cyffredinol y boblogaeth?

And the second question, which is perhaps more for Mr Carter, is: with regard to this impact on lung and general health in Wales, are we different to the rest of the United Kingdom in terms of the level and average of lung disease that we have in terms of COPD and the industrial history in Wales, and so on, and therefore there's a greater impact in Wales because of the general health of the population?

[195] **Mr Brunt:** I'm afraid I can't answer in Welsh. To start with the issue of the figures, these are figures that are quoted a little bit carelessly, I think, in some respects. The 29,000 equivalent deaths figure and years of life lost are not easy to understand. They're complex figures, and the way that they're calculated is based on modelled air pollution concentrations in a locality. So, you have a 1km square grid, basically—the UK is broken down into 1 km square grids—and then a correlation co-efficient, which is basically a relative risk, so it's your risk based on a 10 microgram per metre cubed increase in that pollutant. So, that's all in a tried and tested calculation that then provides you with a figure. And that estimate—and it is an estimate, because the confidence in that is quite wide. So, there's a lot of uncertainty around some of these things, because we often don't know the exact concentration that people are exposed to; we don't know the exposure, and people are affected in different ways, based on their make-up and so on.

[196] So, it is very much an estimate, but it does help to try to quantify or to scope the problem and raise the profile. There are other ways that are emerging to do this, and there's some work that's recently been undertaken in Delhi to express—rather than an equivalent of 29,000 deaths, they've expressed it as the equivalent of passively smoking x number of cigarettes per day, which actually people can relate to. So, there are a number of different ways of trying to communicate this in a meaningful way. But it's important to remember that the 29,000 deaths, or, in the Welsh case—and they are Welsh figures that we've calculated in Public Health Wales—

[197] **Simon Thomas:** Okay, so that's square kilometres in Wales.

[198] **Mr Brunt:** Yes. We've broken all of that down for Wales and come up with our own estimates, so they're not extrapolated from the UK figure. It doesn't refer to 29,000 people. So, that 'equivalent of' is the really important part, because what it means is that air pollution is affecting thousands more people than those 29,000, but actually, cumulatively, it all adds up to around about 29,000 deaths that could have been prevented in the entire population. So, it's a difficult thing to understand, certainly for members of the public, and it goes back to communication and how you actually get that across in a meaningful way. But I think this is the challenge, and this is where public health can come in and help local authorities and others to try to communicate that in the ways that we know are effective and crystal clear.

[199] **Simon Thomas:** And from the point of view of—

[200] **Mr Carter:** Yes, certainly in terms of our view, I certainly wouldn't seek to apply Barnett consequentialists to the numbers of people with COPD across Wales. But no, we do have more people per head of population with COPD and asthma than the UK average. It's about 2.2 per cent in terms of COPD, so 71,000 COPD and just over 200,000 for asthma. There is that challenge of the links between the different figures. So, yes, there is a link between long-term smoking rates—the rates of both COPD and asthma vary dramatically for different parts of Wales, and you can correlate those with the smoking rates, but you can also correlate those with areas of old industry as well, so there are challenges there.

[201] I think one of the reasons we have had a battle in some ways across the UK with this issue is that the air pollution issues have been creeping up on us. I think it's easy to see the effects of smoking around this, but not necessarily the effects of invisible diesel. So, that is a challenge for us. Most of these issues are long-term effects. So, whilst we know that the short-term consequences of exposure affect far more people who actually have COPD or asthma, leading to exacerbations, flare-ups, hospital admissions and, possibly, deaths, if it's a particularly bad exacerbation or attack—because it's easy to play down the seriousness of those things, but an asthma attack or a COPD exacerbation can be fatal. Those are the short-term consequences, but, of course, the long-term consequences of year upon year upon year of being next to a busy road, travelling to a school with a busy road next to it, are the long-term effects of smaller lungs, and therefore you're more likely to have conditions down the road. And, indeed, a family member with pre-

existing asthma or COPD possibly walking that child to school on a regular basis—again, it'll be creeping up on them and is linked to heart attacks as well.

[202] So, those are the challenges, but they do vary. I know that, certainly looking back and focusing on historic industries, there've been some interesting test cases in the courts recently, trying to look at old coking plants and trying to distinguish the effects of COPD on the workers there, and how much that was caused by them smoking—and the vast majority were because of the nature of the industry—versus those who developed it because of working in a coking plant. Actually, there have been some very successful cases on that. So, you can make extrapolations. They are very complicated to do, but you can make that differentiation.

[203] Clearly, looking at children's lungs, particularly in communities where perhaps their parents may well have a history of smoking, and comparing their lungs, particularly if they haven't got anyone smoking in their households, is a useful way of trying to indicate real-world effects on those people.

[204] **Simon Thomas:** I was raised within a couple of miles of the phurnacite plant in Abercwmboi and I remember a lot of these problems.

[205] Ond os caf fi droi yn ôl at fwy o gwestiynau, a diolch am hynny—roedd yn gymorth mawr i ddeall sut y mae'r ffigurau hyn yn cael eu gweithio mas. Yn nes ymlaen efallai, mae'n siŵr y bydd Aelodau'n gofyn mwy am y llygredd sydd ar y stryd fel petai, ond mae gen i ddi-ddordeb ar hyn o bryd hefyd mewn llygredd sydd yn dod o sefydliadau sy'n cynhyrchu ynni mawr. Rydym ni wedi cael tystiolaeth, er enghraifft, bod gorsaf pŵer Aberddawan wedi torri rheolau ynglŷn â llygredd awyr sawl gwaith. Roedd yna achos yn Llys Cyfiawnder Ewrop wrth gwrs, ond rwyf hefyd wedi gweld ffigurau sy'n dangos fod yr orsaf bŵer ym Mhenfro, yn fy

But if I can turn to a few further questions, and thank you for that response—it was a great help to understand how these figures are worked out. I'm sure that later other Members will ask more about the pollution on street level, as it were, but I have an interest in pollution that comes from major energy generation plants. We've had evidence that the power station in Aberthaw has broken rules with regard to air pollution many times. There was a case at the European Court of Justice of course, but I've seen that the Pembrokeshire plant in my region has also breached the level several times. So, I just wanted to ask

rhanbarth i, hefyd wedi torri'r lefel sawl gwaith. Felly, rwyf i jest eisiau gofyn a ydych chi, yn enwedig o ran lechyd Cyhoeddus Cymru, wedi gwneud asesiad o effaith y gôr-lygredd yma o'r gorsafoedd pŵer mawr yng Nghymru—y rhai, os liciwch chi, sy'n llosgi glo traddodiadol yn benodol.

[206] A ydych chi'n cytuno hefyd â'r asesiad penodol a wnaed gan Greenpeace a Chyfeillion y Ddaear a oedd yn priodoli—gan ddefnyddio'r ffigurau rŷch chi newydd fod yn eu defnyddio—67 o farwolaethau cynnar, os mai dyna'r ffordd i'w ddweud ef, i'r ffaith fod gôr-lygredd wedi digwydd yn Aberddawan? A ydy hwnnw'n gwneud synnwyr i chi?

[207] **Mr Brunt:** I've read the report. We provided some comments on it. I think it all comes back to this level of uncertainty. To a certain extent, based on the uncertainty, you can manipulate the data to some extent to bring out some associations that perhaps may not actually be there. It's very difficult to provide an estimate of the impact of a particular point source on a population and that's what we're talking about here—albeit several point sources. We can have a lot more confidence in some of the calculations and some of the estimates that look at pollution in the round. So, what I would say is that there's a lot of uncertainty with that approach, and I can't recall exactly what we said in response to that report, but it was along those lines.

[208] Frequently, in Public Health Wales, because I head up a team that deals with not just air pollution, but air, land and water contamination as well as emergency planning and the planning aspects of new developments, we are asked questions not just about existing plants and existing industrial processes, but about new developments as well. Routinely, we undertake an assessment; it's a public health risk assessment that captures each of those different aspects. So, typically, air quality will be captured as part of our risk assessment, and we will comment on that. So, we can do it retrospectively with a plant that already exists, but, as I say, it does depend on having good

air quality monitoring data there that we can then compare with air quality objectives and put a public health risk assessment that we have confidence in based on that. For the new assessments that are being done as part of the new developments, then we have a responsibility, as part of the consultation process, to flag up any concerns that we might have before that process is actually built, and we've recently done that—

[209] **Simon Thomas:** Can I just ask you on that, then, to understand how you can—? I understand the evidence you just said about you can't really say that this particular power plant is responsible for x number of deaths, because it just doesn't work like that.

[210] **Mr Brunt:** No, it doesn't.

[211] **Simon Thomas:** I understand what you're saying there, but, by the same token, how can you make an estimate of the public health impact of a new development, because, to my mind, the data do not allow you to do that either? If they do not allow you to do it retrospectively, then how do they allow you to do it in that forecasting way? So, aren't we in the same position in that we don't really have a very good appreciation of the real health impacts of some of these major industrial emissions?

[212] **Mr Brunt:** We don't, and the vast majority of industrial processes won't have routine air quality monitoring next to them. So, it's very difficult for us to—unless there has been air quality monitoring undertaken—do an accurate public health risk assessment. A lot of the work is done on modelling, and the 1 sq km grids, as I mentioned previously, are one form of modelling. There will be other modelling that is used to forecast or predict emissions from a point source in new developments. So, to a certain extent, we can look at those and then make comparisons with the air quality objectives. That's what the local authorities will do as part of the local air quality management regime.

[213] The problem with the air quality objectives that we have in statute is that, as the evidence has emerged, we have learned more and more about these pollutants, particularly fine particulates, and there is no safe level. There is no threshold. So, we've got these artificial air quality objectives that may not necessarily be protective of health. But I take your point that it's very difficult to do and there's a lot of uncertainty around a lot of this work, because we don't have that physical measuring station next to where we would like to assess that exposure. It goes back to the point earlier that we

would very much like more monitoring to inform those sorts of decisions.

[214] **Simon Thomas:** Isn't it part of the problem, as well, as is emerging very quickly within the evidence that we've received so far, I think, that you've got Natural Resources Wales looking at the large plants, you've got local air quality monitoring, you've got an organisation like yourself taking an overall view, and you've got the Welsh Government responsible for Natural Resources Wales and permitting, but the UK Government is the state that's responsible for the EU directives? There are a lot of holes for these particulates to get through, aren't there? There are a lot of gaps in the system.

[215] **Mr Brunt:** There are a lot of holes. Actually, the local air quality management regime, which is the research that I'm currently doing, is focused on how we enhance that, but that is, if you like, a delegated responsibility for local authorities. And that's very complicated in itself, but none of that actually features in the Welsh Government's and UK Government's response as compliance with EU legislation. So, there's a disconnect, definitely.

[216] **Mark Reckless:** Can I bring in Jenny Rathbone?

[217] **Jenny Rathbone:** Diolch. All very interesting. Just, first, for the record, is it correct that a child travelling in a car to school is more exposed to air pollution than a child walking to that same school, or are you not able to say?

11:15

[218] **Mr Brunt:** I wouldn't be able to say with any confidence.

[219] **Jenny Rathbone:** Okay, but there's always an assumption by the public that taking your child to school in the car is actually protecting them, when I'm not sure if that's the case.

[220] **Mr Brunt:** There is a study that has recently come out of King's College London and Imperial College London as well that looks at the exposure potential for walking, cycling and car use. That study—that study came out the tail end of last year—suggested that exposure was highest in the car and lowest whilst walking, but only for certain pollutants and I don't think that specifically looked at children.

[221] **Jenny Rathbone:** Okay, thank you for that. That's obviously an area we might want to look into. Just looking forward, now that we've got the future generations Act, in both your experiences, to what extent are policies now being integrated between local authority departments, public services boards and other organisations with expertise to ensure that we are driving down air pollution?

[222] **Mr Carter:** Certainly from our experience, we haven't seen it yet. It's certainly the hope and I think it's a good opportunity to do it. We've attempted to have meetings with the commissioner and her staff, and dates have been promised but then haven't yet materialised. So, from what we have seen, pollution does not seem to be a priority for the office at the moment. I hope that inquiries like this and the attention being brought by Welsh Government might change that. Clearly, again, I think there's a perception issue, as we discussed, about air pollution being a London issue rather than an issue that affects Wales. So, I hope that changes but, at this moment in time, we haven't seen much movement on that, but I hope that changes. I'm not sure if Huw has a different experience.

[223] **Mr Brunt:** I do have a different experience. Because some of my work overlaps with the policy directorate within Public Health Wales, we've got quite good links with the commissioner's office and they've asked to meet to discuss air quality as part of the climate change bigger picture, which is all very encouraging. I think there is an interest in air quality and air pollution because it's specifically mentioned in a few pieces of correspondence that have come out of that office. So, our experience is slightly different.

[224] I think it's a massive opportunity and, from our perspective, again, we are very keen to influence that. If we can do everything we can, as I say, about the go-ahead from the chief medical officer and the Minister yesterday, to support Welsh Government policy officials to develop an information resource that goes through to public services boards to at least get that on their agenda—. I know there are other competing interests but, as we will explain in some of the material, air pollution is very much linked to a whole host of other issues. So, you can't really disentangle it from planning, from transport, from some of these other huge issues that we face, like climate change. It's all wrapped up and part of that one massive parcel, but we do need to break it down somewhat and explain to each public services board exactly what it means for them and what they can do.

[225] **Jenny Rathbone:** So, taking the example of the new Cwmbran hospital,

how are we going to ensure that a major project like that, obviously involving many millions of pounds, is going to deliver improved air quality rather than worsening the situation, in terms of ensuring that people can get there by public transport—clean public transport?

[226] **Mr Brunt:** Yes, sustainable transport is an important one. There are links with transport and there are links with planning. I think that certainly health boards and other public bodies all have corporate responsibilities as well. So, whenever these new developments come into fruition, upstream, there should have been advance thinking about carbon footprint, carbon emissions and really doing their bit to make sure that the impact on the environment, in the main, is much lower than perhaps it might have been without thinking about it. All of that will be part of the discussion and the public health risk assessments.

[227] There's a role here for health impact assessments as well, to try and consider these issues way upstream so that they can be mitigated against and action taken to prevent them actually becoming problems in the first place. Some of the problems that we're facing now is that health impact assessments and considering air pollution in the broader context were not done 20, 30, 40 years ago, which is why some of the issues that we face today around congested streets and poorly planned communities—poorly designed communities—perhaps could have been prevented. So, we are very keen, from a current and future generations context, to make sure that we are starting to correct those problems.

[228] **Jenny Rathbone:** So, do you think we have sufficient regulatory powers at the moment to ensure that we are developing healthy communities, so we are not siting major new housing developments without proper transport links, and so that we are designing cities and communities that are healthy?

[229] **Mr Brunt:** I wouldn't profess to have the expertise on the regulatory side of things. Certainly, on planning, we have worked with Welsh Government and local authority planners to try to influence their policies and will continue to do so. I think a lot of this is to get air pollution, and the broader context of air pollution, on their agenda, and not overlooked. If we can do that, using mechanisms like public service boards to bring people together to look at a problem in the round rather than as just isolated problems further down the line, I think that's half the battle, but I couldn't say about the regulatory aspect.

[230] **Jenny Rathbone:** Okay. Clearly, transport is the big elephant in the room really, isn't it?

[231] **Mr Carter:** It is, and there's a slight paradox or contradiction, I suppose. If someone has a lung condition, they are more likely to need a private vehicle to get to that hospital in that location. They are not necessarily going to be able to walk because of the damage already done to their lungs. We are mindful of that, but clearly, there are lots of crossovers here, in that the more people who are able to get to that hospital by public transport the better. But I also think that there is a link between existing Government policy around trying to develop more health hubs and trying to encourage more things in the community. Obviously, the closer health is to local communities, be it in practices or smaller hospitals, the greater the chance that someone could walk there. That is obviously better for themselves, being active, and for their own lung health, but also better for the whole population by not driving as well. So, that is a challenge.

[232] Just to come back quickly on what Huw said about the regulations, in terms of the extent of what the Welsh Government could or could not do, unfortunately, we are not lawyers in this regard, but certainly, I think we have been frustrated by some of the confusion about what is a Welsh Government responsibility versus what is a UK Government responsibility, and some of those lines being slightly blurred. We are particularly frustrated, I think, by the use of DEFRA guidance for things that actually we could have Welsh guidance for if there was a willingness to do so. The current sense seems to be to not only duplicate, as in word for word, but to literally use the DEFRA guidance and send local authorities and organisations back to that and incorporate it into Welsh laws, as opposed to consulting on Wales-specific regulations. Scotland, obviously, has a slightly different power setup, but Scotland has been pressing ahead with its own, far more ambitious, guidelines. So, we think that there is more that could be done, but how far that can be pushed within the current legal envelope is something we would need further advice on.

[233] **Mark Reckless:** On this area, can I just ask you, Huw—? There was some criticism in the English context of public health functions being devolved to local authorities and whether they were happening to the same degree that they previously had. Are you comfortable with the division of powers in Wales between your function and that of local authorities, and is that working sufficiently well as a partnership for the areas that we have been discussing?

[234] **Mr Brunt:** Yes, it is working well, but there are improvements that could be made, no doubt. Each local authority area, from Public Health Wales, has a local public health team. So, while it's not physically embedded within the local authority setup, they do work very closely together.

[235] **Mark Reckless:** But they report in to you in a way that their equivalents wouldn't in England.

[236] **Mr Brunt:** No, that's right. So, we as a central team are able to have that all-Wales overview, but then we get pulled in to support those local issues. I'm currently working with colleagues in Caerleon, for example, and involving the local public health team in working through action plans on how we can improve active travel and make public health part of that. Historically, we have fallen outside of that. Even though public health specialists aren't embedded within a local authority structure, I don't think that hinders progress that could be made here. If anything, through the well-being of future generations Act, we've got an opportunity now to really pull more people into that and make sense of it. So, I don't think that we've got the sort of problems that have been reported to be the case in England, and I certainly think the opportunities are there. We just need to seize them, and once we've demonstrated in some areas that, actually, there is almost a proof of concept that this works, based on effective evaluations and policies that have been implemented, then I think that we've got something good to roll out.

[237] **Mark Reckless:** I was just going ask, Jayne, whether you wanted to discuss the future generations Act, but also a hospital that I know has big potential for Newport.

[238] **Jayne Bryant:** Thank you, Chair. First of all, I'd like to thank the British Lung Foundation who, last year, made me cycle while breathing through a straw, to get an idea of what having COPD is like. I very much have sympathy with people who have that disease. Just going back to the hospital point, perhaps, which Jenny raised, I'm just wondering about the health impacts assessments and how they're done for communities such as Newport with the Royal Gwent Hospital when traffic will be moved from that area, so less people will be going to it, and how that will affect that community. Do you have any comments about that?

[239] **Mr Carter:** In terms of the practicalities of how that will work?

[240] **Jayne Bryant:** Yes.

[241] **Mr Carter:** We haven't been consulted formally, nor do we, I suppose, have the capacity to reply to every local consultation when it comes to that sort of thing. But, certainly, we would expect there be a health benefit of moving that traffic away. But, obviously, we have to be mindful of the effects of where that traffic will go, and there's a similar dilemma, obviously, with the M4 relief road in that regard. Whilst, clearly, we would welcome any policies that move lots of diesel and particulate-matter-emitting vehicles out of residential areas—and I think that applies for major buildings as well—we have to be mindful of where they might be moved to at the same time. So, I can't comment on the Gwent specifically, I'm afraid.

[242] **Jayne Bryant:** I was also interested in Huw's point on Caerleon, which is a village in my constituency. Whilst I do have the M4 that runs through the city that I live in, there are different problems about air pollution in, say, Caerleon and the M4. Can you comment a little bit more about the work that you've been doing in Caerleon?

[243] **Mr Brunt:** We get asked to support local authorities and other public bodies, and the communities who have these sorts of concerns. Caerleon is a tricky one because it's a declared air quality management area under the regime. The problem that we have there is, because it's a local air quality management area and we have, fortunately, in that instance, measured data, we are able to inform, or to make informed decisions, about how that work progresses. So, there is a proposal within the local authority to extend that air quality management area. Now that, in one sense, is okay and that actually should be done, because every effort should be made to protect the people who live in that area. My issue—and I've had these discussions with the local authority—is that the proposal just to extend that air quality management area doesn't go far enough. If you're going to tackle a local air quality problem, then you need to look at not just the air quality in those two streets, or affecting those eight houses, you need to look at the village or the town and you need to push those interventions that are known to work—that are known to deliver those population-level results. These are the conversations that I'm having with the local authority to try to get, I suppose, an appreciation of the bigger picture, which is where I'm coming from, rather than just dealing with the problem in isolation—to look a bit broader. Because if you look broader, there are more opportunities to increase and maximise the impact that you can have.

[244] **Jayne Bryant:** They're both interesting points, because in Caerleon there's one road in and out, and people live very close to that road. So, again, there's a lot of standing traffic, as there is on parts of the M4. Perhaps you could say a little bit more about the health impacts of standing traffic and the dangers of that.

[245] **Mr Brunt:** The problems that I've heard about are the idling vehicles, and a lot of the information that I've read has been related to buses and parents dropping kids off outside of school. I've not seen anything that actually quantifies what that increased impact looks like, but I suppose it's logical, or plausible, that if you are exposed to a higher concentration of air pollution, then obviously you're at increased risk. If you're a vulnerable individual, then it's highly likely that that increased risk is likely to be higher than it would be in the general population. So, I haven't seen anything that actually quantifies that, but it's plausible.

11:30

[246] **Jayne Bryant:** Brilliant. Thank you. So, to go back to the future generations Act as well, you mentioned in some of your answers to Jenny about working with local authorities, and you've mentioned Newport. Are there any local authorities within Wales that you would see as a shining example of tackling air pollution?

[247] **Mr Brunt:** There have been quite a few local authorities that have tried innovative approaches to tackling air pollution—whether it's tackling air pollution or raising awareness of air pollution. Swansea springs to mind. We've got very strong links with all local authorities, but particularly Swansea. They've introduced a system that warns people coming into Swansea that air pollution has exceeded a certain level on some main arteries into the city, and then diverted traffic. It's proactive and it's innovative, but as we say, it may actually move the problem elsewhere. But it is a short-term fix. Long term, we obviously need to be cutting the numbers of vehicles anyway.

[248] The other example, which we did evaluate—and we, as Public Health Wales, actually paid for measuring air pollution—was the recent Cardiff car-free day. Cardiff local authority did just one day, where it shut off a major road in Cardiff. Admittedly, it was one road; so there's always scope for improvement. But we did evaluate that. The levels of nitrogen dioxide

decreased substantially on that day. So, it just goes to show what could be achieved if we have a broader approach to these and much more of a commitment to make this part of the norm, rather than the exception.

[249] **Mark Reckless:** Can I bring in Simon, and then Huw?

[250] **Simon Thomas:** I just wanted to ask a specific question about one potential good practice example, which is the use of trees in the urban environment. We've had evidence, as a committee, that trees can capture more than 50 per cent of particulate matter, and evidence saying that, in Swansea and the Tawe valley, trees remove 136 tonnes of air pollution per year, saving the national health service £715,000 by reducing asthma and heart disease. Now, I don't know where those figures come from. They come from the Wildlife Trusts, but I don't know where the origin is. But that looks quite attractive. Obviously, trees in the urban environment have wider well-being and climate change—flood prevention and so forth—possibilities. But I've also seen other studies that say that trees can act as a dam and hold in air pollution in the urban environment; so, there's a canopy kind of effect. So, from the public health point of view, what's your recommendation to the use of trees in the urban environment in tackling air pollution?

[251] **Mr Brunt:** The evidence is summarised quite nicely in that NICE guidance that I referred to earlier. Both sides of the coin come into play here. If you locate or plant trees too closely together in the urban environment, then it prevents dispersion of pollutants. That's easy to comprehend. But planting the right trees—and there are several studies to say what the right species of tree are—in areas that are polluted—and I know that there was a project in Port Talbot, like the one you mentioned, that did this—can be extremely successful. The main thing is to understand the different species of trees and what they do, and to work with local authorities and others and NRW to understand how they should be planted. But, yes, both bits of evidence that you present there are good—

[252] **Simon Thomas:** But from the point of view of understanding, we do understand it; therefore there should be enough information for people to, basically, plant trees.

[253] **Mr Brunt:** Yes. There's certainly that information to make it a viable intervention. Definitely, yes.

[254] **Mark Reckless:** Could I bring in Huw on the UK air quality strategy?

[255] **Huw Irranca-Davies:** You've given us a very good idea that, in your view, there's a lack of synchronicity between a lot of the parts and the good work that is going on—the good plans, the good strategies and so on. Can I just look at the top level? The UK air quality strategy has been in place for a long, long time. Is it fit for purpose?

[256] **Mr Brunt:** No. The last iteration of the air quality strategy for England, Scotland, Northern Ireland and Wales was in 2007. We've been advocating, for quite some time, that we need to revisit that—to review and to revise. A lot has changed in that time. The air quality objectives haven't changed, but, actually, we do know a lot more about the health impacts associated with some of these pollutants. So, what is desperately needed is a push to not see those objectives as a ceiling that you can pollute to. We need to push the whole lot down and have a much more stringent approach, in my view.

[257] The main thrust of that strategy—pushing the local problems to local authorities—is another problem, because that then focuses the action only in those areas that fail those air quality objectives. What we need is a two-pronged approach: one that reduces risks for all, so it takes interventions and opportunities to reduce the risks for the whole population, but also, based on the information and an understanding of air pollution at that local level, to target interventions to reduce the inequalities that we know exist. So, in my view, it's not currently fit for purpose, but I think the recent consultation from Welsh Government will inform how we address some of those gaps. But, yes, a new strategy for Wales, giving the recognition that we should to the well-being of future generations Act, and the opportunities that exist I think would be appropriate.

[258] **Mr Carter:** Just to come back on the UK-wide context, I think Huw was far more subtle than I was going to be, so I welcome his frankness there, and it's good to have that brute honesty. There are a few things going on, a few issues at play, I suppose, in terms of the UK-wide perspective. We are very passionate and committed, and working with other organisations, demanding a new cleaner air Act from the UK, because we are conscious of what might happen to all of us from air pollution if and when we leave the European Union.

[259] But I think we also must not lose sight of the fact that although we focus on the current European targets, and when various parts of the UK break those targets, actually, particularly on particulate matter, the European

targets are quite generous, and actually are twice as generous as the WHO targets. Although we talk about no level of particulate matter being safe, the WHO does give guidance, and the European guidance is twice the limit of the WHO's. So, actually, there are opportunities for us to be more bold as a country, but the reality is, at the moment, we are, certainly from a Welsh context, in Cardiff, Swansea and Port Talbot, breaking the WHO guidance on particulate matter. If we could be more ambitious at a UK-wide level, in terms of a new clean air Act, being ambitious regarding vehicle engines and looking again at the tax arrangements for those vehicles—again, perhaps out of our competence here, but things for the UK-wide perspective—we could make some progress.

[260] **Huw Irranca-Davies:** It's fascinating that you say we should go further than those EU regulations have gone—music to your ears, Chairman, I think, this idea that we could be even bolder. But can I just pick up on—. Do you agree that there is actually a need, from a Public Health Wales perspective, for legislation underpinning this as well now—new legislation on clean air?

[261] **Mr Brunt:** I'm not sure whether there is a need for new legislation, because I think what we have is good and is good enough to really tackle the problem, but I think that some of the newer legislation, like the well-being of future generations Act, the active travel Act, the planning and the environment Acts really enhance that original legislation. And certainly from a local perspective, I think that that will pull a lot of this together. That will solve a lot of the problem, but the need for new legislation, I'm not—well, we'd have to assess that a little bit more, I think.

[262] **Huw Irranca-Davies:** Just a couple of other questions—one is to do with the focus that we have, or that we have had traditionally on nitrous oxide and nitrogen oxides. Does anything need to change so that we have a broader focus on the wide range of pollutants, including particulates and others? Or, again, is your assessment that we have the tools in place, we just need to get on with doing it?

[263] **Mr Carter:** I think we have the tools in place, but I think there is an issue of public perception, and, actually, I would slightly disagree with your first comment, because I think, actually, the public perception, you know, is still that the key problem is carbon dioxide and carbon monoxide, rather than nitrogen dioxide. I think that people—although there's a growing body of information in the public domain, I think, still, you know, people are going to forecourts and buying more and more diesel cars, despite the evidence

from different car companies that some of the testing for may well have been, well, interesting—how they did it.

[264] **Mark Reckless:** You can go further than that, can't you? [*Laughter.*]

[265] **Mr Carter:** Thank you. I'm being careful there, Chairman. So—

[266] **Mark Reckless:** You are protected from the laws of libel in this committee. [*Laughter.*]

[267] **Mr Carter:** Well, I thought they only covered yourselves and not the witnesses. [*Laughter.*] So, I think there is still a challenge there in the public perception. I think people don't understand it, and don't understand that we've had decades of people being told about the risks of carbon dioxide and carbon monoxide, in terms of their boilers, and, actually, it's still, I would argue, a relatively new threat for people to perceive, even if we as people working in that field understand it far more. But Huw may have a different view.

[268] **Mr Brunt:** No, I completely agree. I think there is that public perception that it's very much a London problem and there's nothing that needs to be done, or can be done, in certain parts of Wales—that's not the case. I think that the challenge is for us all to work together to communicate those messages. And it goes back to the conversation that we had just now about trying to communicate the equivalent of 29,000 deaths, or whatever it might be—it doesn't mean a great deal to Mr Jones at No. 11. What we need is a very clear, simple message where people can understand the problem, and be part of the solution, so that there is something that they can do, individually, as families, as communities, and we as public bodies can do to try and bring about that change—those little steps that everybody take can then add up to a much bigger difference.

[269] **Huw Irranca-Davies:** And my final question, on a very different subject, and we haven't focused on this a lot, but what is your assessment of the importance of indoor air pollution, whether it's through ambient air pollution that is leaking into the indoor environment, or those sources within the modern indoor environment, or traditional problems such as mould and damp and so on? What's your assessment of that? Do you think it features heavily enough in our strategies and plans for dealing with this?

[270] **Mr Brunt:** From my perspective, it's a very important area. It's one

that's not very well understood, and it actually featured quite nicely in the recent Royal College of Physicians and Royal College of Paediatrics and Child Health report. The problem with indoor air quality as opposed to outdoor air quality is that it varies vastly between households, depending on activities, whether you've got—you could include smoking in that as well, and there's a whole host of different chemicals and pollutants that may arise from furnishings and cleaning products, those sorts of things. So, it's very difficult to estimate what an individual's or a family's exposure is indoors. The one area that we are particularly concerned about in Public Health Wales is that of carbon monoxide. We're doing everything we can to raise awareness around that and make sure that everybody in Wales has a carbon monoxide alarm as a back-up. But outdoor air pollution influencing indoor air pollution—there's obviously something there, but we don't know and there's very little in the literature to tell us what, or how to quantify or scope that problem.

[271] **Mr Carter:** We've done some work around the issue of indoor air pollution and whilst some of the—when the report came out—figures are quite startling, if you take out the smoking in the home, then, actually, the number of deaths was very, very small. I think there is a challenge of different people's—. I mean, ventilation would clearly be a key issue for all of us in terms of avoiding damp and, you know, obviously, if you've got any sort of log burner or some sort of stove, then, obviously, yes, you are going to have issues there. We know there are ongoing challenges with the way people—. How often do people who have a log burner, for example, clear their flue, and that sort of thing, because those are all factors? So, I think it's very difficult to quantify, I would argue. But certainly, I mean, whilst there are—. I was contacted recently, actually, by someone in west Wales regarding the effects of outdoor pollution with log burning, in terms of a power plant. There's actually a significant volume of evidence particularly around that in the indoor setting and less so in outdoor settings. But every context is so different because of the nature of different homes.

[272] **Mark Reckless:** I'll bring in Jenny.

[273] **Jenny Rathbone:** These carbon monoxide testing alarms are now reasonably commonplace. How close are we to enabling concerned individuals to have diffusion monitors in their homes or in their schools? At the moment we have 40 air quality action zones across Wales—several in my constituency—but if we want to home in more on localised areas, does the technology now exist to enable institutions or individuals to be able to monitor it?

11:45

[274] **Mr Brunt:** Yes. In Wales, as you say, there are some recognised air quality management areas, and there are continuous air quality monitors in each of those localities, which gives you a reading of what the air pollution is like every 15 minutes or so. On top of that, we have hundreds—. I say ‘we’—local authorities operate a network of hundreds of diffusion tubes, which are very simple. They’re inexpensive and you’ve probably seen them, the tubes attached to lamp posts. They don’t give you a reading instantly; you have to send them to the lab and they tell you what the monthly concentration is, but the technology has come on quite a long way.

[275] There are several local authorities in Wales that are fitting these new monitors that give you real-time air quality data, and which can be easily attached to lamp posts. And actually, that’s the type of monitor that we used in the Cardiff car-free day. Pembrokeshire are using them in the school setting, and there’s another couple of local authorities. I think Newport, actually, have invested as well. So, it’s seen as a very cost-effective way of getting information about exposure in a particular area, and if we were serious about looking at schools and understanding exposure in and around schools, then those sorts of monitors would be a very cost-effective way of doing it. But obviously, once you find out about a problem, it’s like the screening analogy—you need to be able to do something about it. I think we’re at that stage now where we know a little bit about the general picture. If we know more about a specific problem, we know what we can do and we can put the two together to make a difference to tackle that problem. The technology has moved on quite a way.

[276] **Mark Reckless:** Can I bring in David Melding?

[277] **David Melding:** Thank you, Chair. I think we’ve covered all the points on air quality management areas, and how they relate to the wider picture, but I was very interested in what you said about urban design and anticipating the likely impact of certain policy changes. As we discussed earlier, the shift to diesel in private vehicles has probably prevented many of the gains we would have achieved otherwise in terms of air quality. I just wonder, has any modelling been done that we’re about to have another shift away from carbon fuel, at least directly used by motor vehicles? You can talk about where that energy is generated originally, but if more and more cars, and also public vehicles, are going to be powered by electricity, presumably

we'll be set to make some considerable gains in terms of the urban environment, essentially. Has that been looked at?

[278] It also strikes me that the Government, the UK Government, will lose a tax base, because, obviously, the main tax base for the use of vehicles comes through fuel tax. That would be removed when we move to electricity as the power. I suspect we will see the introduction of some form of congestion charging and road pricing, simply to replace that tax base. And that, actually in the urban environment, would mean that roads cease to be a public good—and, you know, there are justifications for public goods, obviously, but efficient use is not one of them—but road pricing could transform behaviour, couldn't it, because people would make much more efficient choices, or share transport, or reduce journeys? So, has any of this been modelled?

[279] **Mr Brunt:** Yes. Again, returning to the NICE guidance recommendations that are out for consultation, congestion charges, clear air zones and low-emission zones are all part of that, and they are all deemed to be effective interventions to reduce air pollution. The sustainable transport methods issue is an interesting one, and if you can get people out of diesel cars, or diesel vehicles, generally, and into more efficient vehicles, then that is a step in the right direction. But, obviously, we need to go much further, along the lines of active travel, to try and get people to actually not use cars, but they can cycle or walk to wherever they need to go through networks of planned paths and routes. The other thing that is of interest in the guidance and the evidence that is emerging is the impacts, or the potential benefits, for companies, which includes public bodies, because certainly local authorities and the NHS and Natural Resources Wales and the like have huge fleets of vehicles, and if we are able to get those much cleaner and much more efficient than that, in itself, helps. I completely agree that a lot of these problems can be addressed through those interventions that you mentioned, but the planning and the urban design and the community design needs to facilitate that. So, we need cycle paths, we need walking paths, we need them connected, and we need to provide car-charging points and those sorts of things if we're going to be serious about it.

[280] **David Melding:** And are you examining, or do you plan to examine, some of the international best practice now? I notice Oslo is just going to ban motor transport if air quality deteriorates to a certain level, and see what that does to behaviour. I'm not suggesting we follow suit, but it's something we should certainly be examining. The other thing—I mean, some cities have

been quite radical and have suddenly said things like, ‘Well, why are we torturing ourselves about a lack of cycle and walking paths?’—you know, urban environments are covered in routes and all you really need to do is re-designate what you’ve got. And I think it would be useful to see some studies of the results of that type of radical action as well.

[281] **Mr Brunt:** Yes, and I think this has got to be part of the work that now we will get involved in and continue to stay involved in—that broader outlook to what not just the rest of the UK is doing, but what the rest of the world is doing. What can we learn? And how can we then bring that back and apply it to Wales? So, from Public Health Wales’s perspective, we have a duty—or a responsibility, rather—to take that global view, and we would be able to advise on the evidence that is coming through to tell us what’s effective. So, we will continue to do that.

[282] **Mr Carter:** Certainly on that international setting, we have been very interested by the work particularly in Berlin over the last few years since they banned—. Since they introduced their own clean air zone in 2008 they’ve a 50 per cent reduction of particulate matter and 20 per cent of nitrogen dioxide, so it can be done. As you said, looking at Madrid, Athens and Mexico City and the very ambitious plans there to actually ban diesel vehicles is very promising. I think on a domestic setting, looking at the—. We often obviously look to London and what’s being done there, but I think, in reality, whilst that has—of course, it was targeted at congestion, rather than pollution—brought in a revenue stream and reduced congestion to an extent, it hasn’t had the transformational shift that certainly some of these other experiments have done.

[283] We know that clean air zones aren’t—. They haven’t, necessarily, got to be about charging. In fact, they appear to be more effective on an international setting when they are just about straightforward bans rather than being seen as a way of actually bringing in revenue to a local area. So, we can be ambitious and, of course, we all know what a car—. In terms of a dramatic shift, we know what happens in this city alone whenever there’s a match day. You can make a fundamental shift, you can clear the roads; you can make that very different. So, things can be done, we can be radical, but it does require initiative by Government or local authorities.

[284] **David Melding:** That’s very helpful. My second question, then, was more to Joe, I think, really. The Welsh Government’s consulting on local air quality management and noise pollution as well, and—you will know, but

they've consulted on a more streamlined system, changes to reporting, a new template, cooperation in reporting between local authorities, and a shift of emphasis that perhaps puts the wide perspective first and then focuses on the high-risk areas. I just wonder what the British Lung Foundation has said about that consultation, and you might know a bit more about the wider civic sector's response. It'd be useful if you've got any information for us.

[285] **Mr Carter:** We haven't seen the responses from other organisations, actually. We did respond ourselves, and we were broadly supportive of what's in it. I think we were—. But we were slightly concerned that—we felt that the Government could have been tougher on local authorities if there were a lack of compliance. I thought that some of the warnings and letters were—. We were surprised there wasn't more radical action in there, so I suppose our greatest concern there was it not being hugely ambitious. There's nothing wrong with it per se, and our responses were quite limited on that basis, but, certainly, if we think about some of the more radical moves being looked at—particularly in Scotland, thinking of a UK setting—we think that a lot more could be done. I know that one of the things that many of my colleagues are doing—obviously they've been doing a lot of work with London, but they're looking towards these metro-mayor models coming out soon and thinking about the opportunities there for mayors to take ownership in greater Manchester of air pollution. But we have levers in our hands here that we could be applying. Welsh Government could be doing more on this area. It does take political will, and clearly that's not necessarily always possible. But, certainly, even in our existing competence, let alone, obviously, what was agreed yesterday through the legislative consent motion, there are more things that we could be doing here, and, by bringing public health together with others under the future generations commissioner's auspices, we have an opportunity to do a lot more on it, and hopefully avert a public health problem.

[286] **David Melding:** Thank you.

[287] **Mark Reckless:** Did any other Members have questions to ask our two witnesses? Do we feel the future generations Act has been covered? Do we want to tackle diesel cars or—?

[288] **Jayne Bryant:** I think we have—[*Inaudible.*]

[289] **Mark Reckless:** We had good coverage before, yes. You heard some of what we had before, and I think, overall, with the contribution from you two

gentlemen and our earlier panel, we've got a very, very solid spread of evidence from our session this morning. So, if I can thank you very much for coming to join us.

[290] **Mr Brunt:** Thank you for the opportunity.

[291] **Mr Carter:** Thank you for having us.

11:56

**Cynnig o dan Reol Sefydlog 17.42 i Benderfynu Gwahardd y Cyhoedd
o'r Cyfarfod**

**Motion under Standing Order 17.42 to Resolve to Exclude the Public
from the Meeting**

Cynnig:

Motion:

*bod y pwyllgor yn penderfynu that the committee resolves to
gwahardd y cyhoedd o'r cyfarfod yn exclude the public from the meeting
unol â Rheol Sefydlog 17.42(vi).*

*in accordance with Standing Order
17.42(vi).*

Cynigiwyd y cynnig.

Motion moved.

[292] **Mark Reckless:** And if I may briefly propose we go into a private session under Standing Order 17.42.

Derbyniwyd y cynnig.

Motion agreed.

Daeth rhan gyhoeddus y cyfarfod i ben am 11:57.

The public part of the meeting ended at 11:57.