HSSH Sub-Panel - Telephone Masts Review

Telephone Conference

TUESDAY, 23rd JANUARY 2007

Panel:
Deputy A. Breckon of St. Saviour (Chairman)
Deputy C.H. Egré of St. Peter (Vice-Chairman)
Senator B.E. Shenton
Connétable M.K. Jackson of St. Brelade

Witnesses:
Dr. Jack Rowley, GSM Association

Deputy A. Breckon of St. Saviour (Chairman):
Good afternoon, Dr. Rowley, and you hear me?

Dr. J. Rowley:
I can, Deputy Breckon.

Deputy A. Breckon:
You will have to believe me when I tell you who is present, because you cannot see us. Thank you for your time anyway in what is indeed some unusual circumstances. I will just give you some of the background. Normally were you to appear before us you would see in front of you a copy of witness warning, but we will read that to you. I am Chairman of the Health, Social Security and Housing Panel and we have set up a sub-panel and the other members are Deputy Colin Egré, Constable Mike Jackson and Senator Ben Shenton. I do not know if you have seen our terms of reference but it is a scrutiny review of telephone masts. The terms of reference are: "The sub-panel will consider the concerns of the public relating to perceived health implications as a result of the increase in applications for mobile phone mast installations, following the recent expansion of the mobile telephone market. In undertaking this review, the sub-panel will have regard to the advice provided by the Health Protection Department; international standards and best practice in respect of health precautions, health concerns raised by the public and reporting its findings and recommendations to the States. That is our terms of reference. I will ask Deputy Colin Egré to read the witness warning statement.

Deputy C.H. Egré of St. Peter (Vice-Chairman):
I think it is useful to say who we are when we start speaking to you, Doctor. Can you hear me all right?

Dr. J. Rowley:
Yes I can, thank you.

Deputy C.H. Egré:
Right, so it is Colin Egré and I am reading from a document which I have had to read to everybody who has sat in front of us to date. It states that: "It is important that you fully understand the conditions under which you are appearing or talking to us at this hearing. The proceedings of the panel are covered by parliamentary privilege through Article 34 of the States of Jersey Law 2005 and the States of Jersey (Powers, Privileges and Immunities) (Scrutiny Panels, PAC and PPC) Jersey Regulations 2006. Witnesses are protected from being sued or prosecuted for anything said during hearings, unless they say something that they know to be untrue. This protection is given to witnesses to ensure that they can speak freely and openly to the panel when giving evidence, without fear of legal action, although the immunity should obviously not be abused by making unsubstantiated statements about third parties who have no right of reply." The panel would like you to bear this in mind when answering the questions. The proceedings in this case, as in other cases, are the transcription will be made available to you, but it will be appearing on our local scrutiny website in Jersey. That is the completion of my statement. Are you happy with that one?

Dr. J. Rowley:
Thank you, Deputy Egré, I understand that quite clearly.

Deputy C.H. Egré:
Okay, thanks.

Deputy A. Breckon:
Can I just continue, Dr. Rowley and say that you were supplied with some questions, I will come to that in a moment with you, but they are not cast in stone, so it could well be there are things arising from other things that you say. What I will do in a minute or two is ask you to introduce yourself, and at the end there will be an opportunity to say anything that you want that we may have omitted, or you may wish to add. Given the circumstance, it is fairly relaxed, so feel free to answer as you feel appropriate. This is part of a process and not the end of it, so if there is anything that you think about later, or perhaps you want to expand on in a written form, or whatever, or even come to the Island in the middle of February, that is an option I think that is open to you. The other thing is that Deputy Egré did mention the transcripts. We are recording this and will transcribe it and a copy will be sent to you, so that if there is something factually that you wish to correct you will be given the opportunity to do that. I think it is appropriate now if I hand over to you and I would suggest that you introduce yourself and give us a brief outline of your background in respect of mobile technology. Then perhaps if you could add to that

anything that you wish to say and take as long or be as brief as you like about that, and then that would perhaps get rid of the need to ask all those questions, if you could cover that in some of the things that you wish to say. So, with that I will hand over to you, Dr. Rowley.

Dr. J. Rowley:

Thank you, Deputy Breckon. I hope you can hear me clearly, and I apologise for the difficulties this morning and thank you and for the assistance provided by the secretariat of the panel, for their persistence in allowing me to be a witness to the panel. By way of introduction, my title is Director of Research and Sustainability and I currently work within the Public Policy Team of the GSM Association. The GSM Association itself is an international trade association, representing almost 700 GSM and 3G network operators in more than 200 countries and territories around the world - included within that are all the GSM and 3G operators operating in Jersey, among our membership. My own personal background in the areas of interest to the sub-panel is that I have been working in the area for somewhere around 15 years. I became involved when I was working with the Telstra Research Laboratories in Melbourne, Australia, initially in technical matters related to the measurement of radio signals and design of antennas. I subsequently moved into addressing public concerns related to the use of mobile phones and base stations. I have been involved, while working with Telstra, in providing exposure systems design support to a number of research projects. I have been an active researcher myself. In the year 2000 I joined the GSM Association and in that capacity I oversee the GSM Association's international health research programme. That programme has a budget of roughly 1 million euro a year. It commenced in the year 2000 and it is currently scheduled to run through to 2008 or 2009, and in that programme we sought to address priority research areas that the WHO (World Health Organization) has identified. My work in regards to that involves specification of research projects, identification of labs, contracting negotiations et cetera and then oversight of those projects. I continue to be closely involved in the technical matters of reviewing projects and progress reports, and research outcome. I am not now directly involved so much in the actual conduct of studies themselves. My PhD is from RMIT University in Melbourne, Australia, which I did it in the area of designing mobile phone handset antennas, with particular interest in the amount of energy deposited in the head and hands by different types of handset antenna designs. I have some 80 publications, between conferences and journals, in the field, so considerable experience in relation to the business of the sub-panel. I will just make some very brief remarks by way of summary, in terms of what my evidence includes. Hopefully you have been given a copy of the GSM Association's submission. Overall the GSM Association takes the view that there is a significant body of scientific research going back more than 60 years in relation to radio signals. There is also quite a large body of research now specifically in relation to mobile telecommunication radio signals. That research in totality has been reviewed by the WHO. The consensus of statements from a number of scientific review panels is that provided infrastructure is designed to be compliant with the ICNIRP international exposure guidelines there is no convincing evidence that there are any adverse health effects. In the rest of my evidence I go through

some of the specific issues that are of interest to the panel in relation to policies associated with base station siting, and what makes technical sense and what does not make technical sense. It also reviews a couple of fairly-specific allegations in relation to possible health outcomes that people have claimed when they are living close to base station sites, such as evidence of cancer or sensitivity to electromagnetic fields and specific concerns in relation to children. Just before I finish up summarising my evidence, I just draw the attention of the panel to the annex in section 9 of the evidence beginning page 25, where we list some 100-120 independent and expert reviews in relation to radio frequency signal safety, that have been conducted by many different groups in many different countries around the world. We include this in the evidence by way of indication that this is an area where there is a lot known; there is quite a significant body of research and that there are standards in place. Many, many reviews have come to essentially the same conclusion that compliance with ICNIRP is sufficient to protect public health. Thank you.

Deputy A. Breckon:
Anybody like to ask any questions of what has been said there, or arising from the prepared questions?

Connétable M.K. Jackson of St. Brelade:
Mike Jackson, speaking. Could I ask who provides the funding for the research with which you have been involved?

Dr. J. Rowley:
The GSM Association, as a matter of policy, tries to set up research projects so that there is 50/50 funding from government and from industry. In relation to the industry funding that will come both from the GSM Association operator and manufacturer members and potentially from other industry or trade association sources. In relation to the government or international authority funding, a significant proportion has come from the European Commission under the Framework 6 programme. There have also been contributions from national authorities in France and the UK, Italy and Finland. As part of setting up the projects we have been particularly aware that where there is difficulty in obtaining matching funds from third-party national authorities, we take particular care in establishing oversight committees, and in the use of third parties for payment and reporting, so that there is a firewall whereby we can track progress for project budget accountability but the scientists have all the rights of independence in terms of making the scientific decisions. In particular on that point, because we are aware that there is concern that industry might suppress unhelpful findings, the GSM Association has, in its contracts, for some years required the scientists to submit their research for peer review publication. To ensure that it is done, we have now made a small proportion of the funding associated with future research contracts conditional on the fact that the researchers will submit their papers for publication.

The Connétable of St. Brelade:

Thank you. Would you concur that we will never be able to find conclusive scientific evidence to prove that mobile mast emissions do not represent danger to human health as a result of proximity?

Dr. J. Rowley:
I think that question goes to the fundamental nature of the scientific process, in that you cannot prove a negative. You cannot prove that there is no risk. What you can show is that by reviewing the wide range of studies, each of which individually showed no evidence of an adverse health effect, then you can reduce the probability that there may be an adverse health effect, but you certainly, by way of a scientific process cannot provide absolute guarantees of safety. That is why in turn a number of the safety standards will incorporate additional factors to take account of that uncertainty from a scientific point of view and provide additional protection for the public health. In relation to mobile communication, the typical safety factors built into standards like the ICNIRP (International Commission on Non-Ionizing Radiation Protection) guidelines are 50 fold. When you are looking at actual exposures from masts in public areas you are typically looking at 100-1,000 or many millions of times below the recommended guidelines from ICNIRP. That in turn means that you have, for example, if you are 100 times below the standard because of the safety factor you are effectively 5,000 times below the threshold at which there are any established effects and actual levels are much lower than that in many situations.

The Connétable of St. Brelade:
Thank you. Would you agree that World Health Organisation and ICNIRP are really the only international bodies to give a credible answer when it comes to safety standards?

Dr. J. Rowley:
I think from a global perspective, the WHO is certainly the global authority that the GSM Association listens to, you do have a number of other independent expert groups either constituted nationally or regionally, which have also looked at this issue. For example the European Commission Health Directorate has an expert advisory group, one of its roles includes advice on EMF (Electric and Magnetic Fields) issues, which is in turn forms the basis for the Council recommendation that ICNIRP should form the basis for exposure limits for both the public and occupational exposure.

The Connétable of St. Brelade:
Thank you.

Deputy A. Breckon:
Colin, anything?

Deputy C.H. Egré:

Yes, it is Colin Egré again. One of the problems coming to light as we progress through this investigation is that there appears to be a huge concern amongst members of the population about perceived risk, rather than scientific risk, with regard to the use of mobile phones and mobile phone masts. How do you think we should counter this perceived risk that is causing us so many problems?

Dr. J. Rowley:
I think you have, Deputy Egré, hit the issue squarely on the head. The critical problem is that challenge of bridging the gap between scientific understanding of risk and uncertainty, and public perception regarding risk and uncertainty. The evidence so far is from sociological inquiries, such as the research of Dr Adam Burgess in the UK and from more focus group type work by Dr Peter Weidemann, and colleagues in Germany, is that people are most reassured by statements referring to the international scientific consensus, to compliance with standards, to where they feel that there is a process by which their concerns can be aired and there is an impartial mechanism to have the decision arrived at. What causes people to be concerned is if those processes and statements are then couched with additional qualifiers saying, "We do not believe there is any real specific concerns but if you are concerned you may reduce your personal exposure by using a hands-free kit". Or, for instance, the recommendation in the Stewart Report in relation to the "beam of greatest intensity." Those additional measures tend to undermine the confidence of the safety of the standards and the process of decision-making. So my view from looking at the research and my personal experience of dealing with the public, both individually and through public meetings, when I was working for Telstra in Australia, is that policy, procedure and statements must be drawn from the science, must reference that science in those standards, that there must be an opportunity for real communication and dialogue. But importantly, there needs to be a process around that dialogue, which involves a decision by an independent body.

Deputy C.H. Egré:
Yes, I appreciate what you are saying there, but you mentioned the word "impartiality". Now again, one of the concerns that people do appear to have is the fact that the industry, in regard to the global economy, is worth billions and billions of pounds. As a consequence of history in the way certain scientific information has been imparted on other subjects there is a concern that, "Well, they would say that, wouldn't they?" in regard to this industry. So, therefore, there is a confidence building exercise which needs to be done. How would you go about doing that?

Dr. J. Rowley:
If I had the exact answer to that I would be a very wealthy man. I will give you my best understanding of what I think is of assistance. There needs to be information available when people want to understand the extent of real uncertainties, where the risks actually are and what is being done to address the uncertainties. That needs to be available through trusted agencies. If you want to rank the trusted agencies: industry ranks low, most political and government agencies rank slightly higher in terms of

public confidence, but people most trust more university type persons, academics, and the general medical community; the GPs, the Health Department. So, I think any communications around health issues and health concerns needs to include those groups, if you like, certifiers that the information is accurate and trustworthy. That information approach needs to be accompanied with a clear process that everyone can understand. So, on the industry side it is clear what they have to do in order to apply for a site permit. But also from the public side: where are their opportunities to object, on what grounds and then who will make that decision. In a number of jurisdictions where that challenge of legitimacy arises, ultimately those decisions are being made by environment type courts or administrative appeal type courts, which are perceived to be somewhat independent of government and industry and will weigh up the evidence. The experience from that process in a number of countries is that the court generally accepts that compliance with international guidelines is protective of all persons. But it usually takes a number of hearings for that message to become accepted by those who are concerned about the mast. This tends to reduce the number of objections, I think, over time. It is important when considering this whole issue of public perception that by and large people are not all that worried about masts. Public perception research in a number of European and other countries indicates that for most people concerns about masts and handsets is not top of mind - they only appear in the top ten for about 5 per cent of people. Where it does become an issue is that once there is a proposal to have a mast nearby that concerned percentage may increase to 20 or 25 per cent. But a large proportion of those people are essentially undecided. They want to have information, they want to understand what the issues are and then they will make up their mind. There are a small percentage of persons who, regardless of the information that is provided, will maintain one view or the other - they will maintain the view that they are safe or they are unsafe. In trying to address that minority it is not likely to be effective.

Deputy C.H. Egré:

Thank you for that. Can I ask you to comment on your view of public access to information, firstly in the siting of the masts and secondly, on the independent monitoring of any emissions and regular reporting thereon, and also to make that translatable so that the public have a view of that which is not too scientific for them, so that they are able to understand it?

Dr. J. Rowley:

In regard to access to information about site application, my view in the GSM Association is that the processes that should apply should be similar to those that apply for other similar types of infrastructure. That it is potentially a mistake to single out special attention for applications related to masts that would not be required for other similar applications. I will give you an example. In Australia if you are putting a base station antenna, one of the rectangular panel type antennas, they are about 2 metres tall by maybe 30 or 40 centimetres wide, and you are putting that on a rooftop, there is no requirement to apply for planning permission. Because it is a small structure you would not need to apply for planning permission, a process that applies for other objects of a similar size, perhaps a small

billboard or advertising. However, when the mast becomes a larger physical structure and there is a freestanding pole then there is a requirement to apply for planning permission. There are variations around the size where you draw the line in a number of different countries. In doing that you have to understand that mobile networks are not static. The mast is built, the antennas are put up but over time the number of users in the area changes, the type of service that they want to access changes, and so the antenna configuration of the site may need to change. You may move from the site where the objective initially was a wide-area coverage to where you need more capacity, in which case the antennas et cetera will have to change. So there needs to be some aspect of the process which accounts for that change in a reasonable way. In terms of access to data and monitoring, I am unconvinced of the necessity for ongoing monitoring of sites. As I have said, and I say in my evidence, there is a significant margin basically between the actual levels of exposure in the community and the safety standards for exposure levels. Measurements at ground level essentially only confirm compliance to something that is already known and it could already, in many situations, be established from prediction. Where I can see merit in a measurement campaign is if they are part of a broader approach to confidence building with the community, in which case it may be that there is a sub-set of sites or a sample of sites, which are measured periodically. For example, in the UK there is a process whereby community groups can nominate sites for potential measurement and then they are considered by the Health Protection Agency in terms of planning which sites they will measure. I think it is really important at the outset of any of that process to address the points you made: 'of how do you report that data; how will you make it acceptable to the public? In general, the approach that seems to be used to try and provide some context is to report both the absolute numbers, and the percentage of the relevant exposure guidelines, and to make that information, by and large, accessible from the internet. Usually it is helpful to provide both the individual site report and a summary report, whether on an annual or biannual basis, depending on the number of measurements that are done. Where the difficulties have arisen is in a country like Spain, which in response to public concern, decided in the year 2001 that it would require all base station sites to be measured. In the country this amounted to some 10,000 or 15,000 sites. There were many millions of euros spent in terms of surveying all of those sites. Now the Spanish authorities have got a room with a lot of files in it. They did not know what they wanted to do with that data once they collected it and that, I do not think, is helpful to anyone.

Deputy C.H. Egré:

Talking about this little Island of ours, I am sure you appreciate we are only 45 square miles serving a population of anywhere between 86,000 and 96,000, depending who you speak to. Bearing those figures in mind, the area and the population, there is the possibility that we might have, on this Island alone, in excess 300 masts. What are you views on that, in comparison to the actual density equivalents, say in the UK?

Dr. J. Rowley:

Well, what I will do is I will refer you to page 7 of my submission, where I spoke about some of the factors that affect the number of sites that are required. They are required for a number of reasons: they are required purely on the number of people that live in the country, as you have outlined, the population density, but also factors such as the physical terrain, the presence of mountains et cetera, and the extent of urbanisation. Radio signals do not penetrate most building materials very well. So if you want to provide good in-building coverage you need to have the antennas closer to people, closer to the building to get the signal inside. If I understand it, I do not know the figure for the UK, but the population density in Jersey is very high, in the range of, I think, 700 persons per square kilometre. So, in that case you need, as I say in paragraph 26, about five times as many base stations as you would if you had essentially a rural population, when we are looking at less than 250 persons per square kilometre. I cannot comment specifically about whether there are an excess of base station sites on Jersey. There are a number of historical factors which will reflect the number of sites built in any particular country, beyond those physical factors. There are issues in terms of strategy from the network operator in terms of whether they are aiming for coverage or capacity, what data rates they are aiming to provide via their service, the frequency at which they operate, for example GSM 900 signals will tend to travel further than 3G signals, purely because of the higher frequency used for the 3G services. Also related to that, higher data rate services tend to be for a smaller radius cell.

Deputy C.H. Egré:
So in effect, the biggest variable really that defines the number of masts is the actual number of subscribers really.

Dr. J. Rowley:
The number of subscribers, the services they require and then the topography of the landscape.

Deputy C.H. Egré:
Just as a matter of interest, I do not know if you are aware that Jersey Telecom alone is suggesting they have 116 per cent coverage. That is not on geographical coverage - that is on subscribers.

Dr. J. Rowley:
Right, I am not aware of that.

Deputy C.H. Egré:
So more telephones that we have people, and that is one subscriber out of three.

Dr. J. Rowley:
That is interesting.

Deputy C.H. Egré:
Yes.

Senator B.E. Shenton:
It is Ben Shenton here. Could I just ask you a question? Do you think it would be prudent as a Government if we were to insist that every site is covered by public liability insurance to cover any future health issues that may arise?

Dr. J. Rowley:
The GSM Association has not considered the issue of insurance extensively in regard to members. We see that is something that members themselves would decide in relation to what is required. I have not generally seen that as a requirement in other jurisdictions. If there were issues to arise in the future then there would be - and I am not a lawyer, I am an electronic engineer by training - issues of tort and public liability matters that would arise. I think it is a matter for the companies to determine how best they provide for commercial protection for themselves in that regard. This issue about insurance and EMF issues, we have looked into it in respect of claims from a number of groups that insurers do not provide coverage for mobile network operators in respect to their insurance policy, in that they have exclusions on EMF issues. I personally have not been able to identify any company that has had any problems with their insurance reviews or any exemptions or qualification as regard to EMF cover. The exception is the situation in the US where a number of insurers have declined to provide cover for handset manufacturers in respect of the cost of defending litigation. Not whether the product is harmful or not, but that the cost of fighting litigation in that situation is excluded from insurance protection, because of the specific nature of litigation in the US. But in relation to masts I have not come across any situation where public liability insurers made a specific requirement in relation to EMF. I am aware of some places in South-East Asia where there are earthquake zones and there are concerns about what would happen if a mast did fall over in an earthquake, where there may be some additional specific requirements, but they are not EMF related, they are related to the structural security.

Deputy A. Breckon:
Anybody else? We are fairly content with what you have had to say Mr. Rowley. The only think I would say, as I said at the start, if there is anything you would like to say in conclusion.

Dr. J. Rowley:
I guess there are two things I would make remarks to. One is the matters around exclusion zones. I come to that again because it is an issue that does periodically become a recommendation from activist groups and concerned citizen groups. It is the view of the GSM Association and other bodies such as WHO, the Health Protection Agency in the UK, or indeed the European Commission, that there is no technical basis on which to establish such an exclusion zones. The exclusions zones themselves would

have unforeseen planning consequences. If such a zone or policy was adopted, future development within that area would be curtailed, such as siting of childcare facilities or otherwise. And so we would strongly believe that such approaches complicate the issues, they increase public concern, they do no help to resolve the matter. And then the second thing, and final remark I would make, is that I think this review is potentially an important part of addressing the issues, I think that were identified by Deputy Egré, that there is a bridge that needs to be found between the scientific view of risks and the public risk perception. I think this sort of sub-panel type review can be a very important step in linking the two views of the issues. On behalf of the GSM Association I thank you for being patient with the technical issues, of allowing me to speak to you and I would be very happy to provide any additional information that you might request on reviewing the submission, or any other materials that I might think of after this discussion. Thank you.

Deputy C.H. Egré:
It is Colin Egré again, one thing I forgot to ask of a technical nature, and it has to do with the base mast system. As I understand it, the actual transmission lobe is presented out from the aerial head. From reading the information from the NRPB (National Radiological Protection Board) the lobe touches the ground at approximately between 50 and 300 metres and they suggest that inside 50 metres there is no return. Do you have side lobing coming out on those aerials?

Dr. J. Rowley:
You certainly do. The first side lobe tends to be a factor of between 20 and 100 below the main lobe. Depending on, as you said, that distance of 50 to 300 metres, that would be determined by the height of the mast. If the mast is high then it will tend to be that the main lobe dominates in terms of …

Deputy C.H. Egré:
Yes, they talk of a 15 degree tilt-down.

Dr. J. Rowley:
Yes, that will tend to dominate in terms of determining the distance. As you get closer to the ground then it may be that the side lobes that are closer to the ground. In turn they determine the distance of maximum exposure. But certainly you cannot have an antenna without side lobes.

Deputy C.H. Egré:
Yes, I appreciate that one. Okay, thanks for that.

Deputy A. Breckon:
Can I just conclude then by thanking you for the excellent way you have handled this in what must be difficult circumstances? We do not know where you are, but maybe --

Deputy C.H. Egré:
We have a photograph.

Deputy A. Breckon:
We do have a photograph of you on the desk. But also to thank you for the written submissions that you made. Today is part of a process, not the end of a process and will be going on for a number of weeks, and indeed months, yet. So, if there is anything that you wish to submit following today please feel free to do so. Also, we would like to reserve the right to contact you, should what you have said or what you have submitted raise any issues for us. As I said at the start, we will get a transcript of this to you, and if there is anything in there that you factually wish to correct you are free to do so, after which we will publish that on our website and it will be a matter of record. So I will just conclude with that. Thank you very much indeed for your time and effort. Thank you.

Dr. J. Rowley:
Thank you, everyone.