



The Scottish Parliament
Pàrlamaid na h-Alba

Official Report

INFRASTRUCTURE AND CAPITAL INVESTMENT COMMITTEE

Wednesday 24 February 2016

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INFRASTRUCTURE AND CAPITAL INVESTMENT COMMITTEE
7th Meeting 2016, Session 4

CONVENER

*Jim Eadie (Edinburgh Southern) (SNP)

DEPUTY CONVENER

*Adam Ingram (Carrick, Cumnock and Doon Valley) (SNP)

COMMITTEE MEMBERS

*Clare Adamson (Central Scotland) (SNP)

*Alex Johnstone (North East Scotland) (Con)

*Mike MacKenzie (Highlands and Islands) (SNP)

Siobhan McMahon (Central Scotland) (Lab)

*David Stewart (Highlands and Islands) (Lab)

*attended

THE FOLLOWING ALSO PARTICIPATED:

Mike Baxter (Scottish Government)

Roy Brannen (Scottish Government)

Keith Brown (Cabinet Secretary for Infrastructure, Investment and Cities)

Susan Duncan (Scottish Government)

Alasdair Hamilton (Scottish Government)

Wayne Hindshaw (Scottish Government)

Derek Mackay (Minister for Transport and Islands)

CLERK TO THE COMMITTEE

Steve Farrell

LOCATION

The Adam Smith Room (CR5)

Scottish Parliament

Infrastructure and Capital Investment Committee

Wednesday 24 February 2016

[The Convener opened the meeting at 09:30]

Subordinate Legislation

Procurement (Scotland) Regulations 2016 [Draft]

The Convener (Jim Eadie): I welcome everyone to the seventh meeting in 2016 of the Infrastructure and Capital Investment Committee. I remind everyone to turn off mobile phones, because they affect the broadcasting system. As meeting papers are provided in digital format, you may see tablets being used during the meeting. We have received apologies from Siobhan McMahon.

The first item on the agenda is evidence on the draft Procurement (Scotland) Regulations 2016. I welcome the Cabinet Secretary for Infrastructure, Investment and Cities, Keith Brown; Alasdair Hamilton, policy manager for the Scottish procurement and commercial directorate; Susan Duncan, policy manager for the Scottish procurement and commercial directorate; and Mark Richards, solicitor at the Scottish Government.

The instrument has been laid under affirmative procedure, which means that the Parliament must approve it before the provisions can come into force. Following this evidence session, the committee will be invited under agenda item 2 to consider a motion to approve the instrument. Alongside consideration of the instrument, the committee will have an opportunity to hear from the cabinet secretary about the full package of subordinate legislation associated with procurement reform.

I invite the cabinet secretary to make an opening statement, introducing the instrument and other measures associated with public procurement reform.

The Cabinet Secretary for Infrastructure, Investment and Cities (Keith Brown): Thank you for the opportunity to discuss with the committee the changes that are being implemented. There is a substantial raft of changes to public procurement legislation in Scotland. Today, we will look mainly at the Procurement (Scotland) Regulations, but it is difficult to talk about those regulations without touching on the other regulations that we have

recently introduced—the Public Contracts (Scotland) Regulations 2015, which the committee recently wrote to me about; the Utilities Contracts (Scotland) Regulations 2016; and the Concession Contracts (Scotland) Regulations 2016, which transpose new European Union procurement directives—and, to add to that, the new statutory guidance that is provided for in the Procurement Reform (Scotland) Act 2014.

Between February and April last year, we consulted about our plans on how best to transpose the directives and implement the provisions of the 2014 act. When I appeared before the committee last June, I stated that our intention was to ensure that changes would be as simple and as easy to follow as we could make them, and that we were seeking to avoid, where possible, one set of rules applying to larger-value contracts and a different set of rules applying to lower-value contracts. I also said that respondents to our consultation seemed, for the most part, to have agreed with our proposed way forward. The regulations that we have now laid have been drafted on that basis, following feedback from that consultation exercise.

Those responses also helped to shape the statutory guidance that arises from the 2014 act. Throughout 2015 we engaged with a wide range of stakeholders to help develop the content of the statutory guidance. I gave a commitment to fast track the publication of statutory guidance that covered fair work practices in procurement, including the living wage. On 6 October, I published that guidance, with the changes coming into effect on 1 November. I aim to publish the remainder of the suite of guidance by the end of February.

The Procurement (Scotland) Regulations 2016, which the committee is considering, implement the remaining provisions of the 2014 act. The regulations should help to ensure that the procurement processes and procedures that are found in public contract regulations—and those that are found under the act—will be broadly similar. They will allow for consistency and clarity.

We received a number of requests to allow a reasonable period of time for the procurement community to make necessary changes to its internal processes and procedures. For that reason, although I am laying the regulations now, they will for the most part enter into force on 18 April—two years being the period in which they had to be done. That is the same date on which the regulations that transpose the European Union directives will enter into force. The gap between the regulations being laid and their coming into force will allow time for changes, and it will provide time for the roll-out of training for purchasers on the changes to procurement rules.

As part of that transitional arrangement, I have delayed until 1 June the date on which public bodies need to comply with both the sustainable procurement duty and the community benefits obligation. I have done that in recognition of the fact that those factors will normally be considered as part of a purchaser's procurement strategy, and that strategies may be devised some months in advance of the procurement starting. I have also delayed the date by which public bodies must publish their procurement strategies, and no body will be required to produce a strategy before 31 December 2016.

I know that the committee has questions on the treatment of tax in the regulations. I have seen comment to the effect that there is no reference to, or substantial actions on, tax dodging in the regulations. That is categorically not the case. The Procurement (Scotland) Regulations 2016, the Public Contracts (Scotland) Regulations 2015, the Utilities Contracts (Scotland) Regulations 2016 and the Concession Contracts (Scotland) Regulations 2016 all contain provision so that businesses that have not paid their taxes can be excluded from the bidding process.

For higher-value contracts, there will be a legal obligation on public bodies to exclude a business where the non-payment has been established by a judicial or administrative decision. Public bodies can go further and exclude a supplier where the non-payment has been established by other appropriate means, although in that instance the body will be able to reach a decision on whether to exclude based on all the relevant facts that are available to it. The Scottish Government or the guidance cannot anticipate in advance what all the facts will be in every case. That provision also applies to lower-value contracts, which are governed by the Procurement (Scotland) Regulations 2016.

I will not go into further detail at this stage, but there are other issues on which we have carefully weighed up the arguments. Those include tackling blacklisting, reserving participation in competitions to mutuals or to supported businesses, as now defined in the new European Union directives, and how to ensure that contract award criteria can take account of social considerations. On those last two points, I have written to the European Commission seeking clarification and we still await a response from it.

I welcome the opportunity to engage with the committee again, and I am happy to try to address any questions or concerns that you may have.

The Convener: Thank you for that helpful opening statement.

The Scottish Government published its procurement policy note on 18 December 2015.

As you have already alluded to, the set of regulations seeks to transpose EU procurement directives into Scots law. Given that Europe seems to be the dominant issue in the news at the moment, do you have any assessment of the impact of what is commonly referred to as Brexit on the process of transposing EU procurement directives into Scots law?

Keith Brown: I did not expect that question, although perhaps I should have done.

The Convener: I did not either, until you started speaking.

Keith Brown: It is perfectly topical and relevant. Obviously, at present, those directives and a huge number of other directives bind what public authorities do in many respects. If we suddenly did not have that, we could on the one hand maybe say that we would have all this new freedom to do as we wished without those constraints. However, by and large, my view is that the constraints are there for a good purpose. They ensure that we go through a clean, fair and transparent procurement process and that, as far as we can, we take into account other considerations such as social and socioeconomic impacts.

If we suddenly were not bound by that, that would be a difficult situation. A large amount of training is required and public bodies have made a lot of investment in ensuring that they comply with the regulations, so such a change would undermine all that investment that has been made. I think that we benefit greatly from the directives. If we ensure that our provisions are fair and transparent, that allows our suppliers and contractors in Scotland to properly engage with other parts of the EU. I am not sure that those other parts of the EU would be so keen to allow us to do that if we did not comply with the same rules that they comply with. The change would introduce an element of uncertainty and would perhaps make the playing field on which purchasing takes place much less level. I suggest that we should not do that.

The Convener: You said that it has been about two years since the Procurement Reform (Scotland) Act 2014 was passed. There has been a consultation exercise and the development of statutory guidance, and we have dates for the roll-out of that. I am sure that there are good reasons for the delay, but will you say a little more about why it has taken that length of time? I presume that one of the issues is to do with training for purchasers, which you mentioned. I am sure that we all want to get it right. It would be helpful if you said a little more about that.

Keith Brown: We could have taken the approach to the issue that the UK Government has taken and basically just copied the regulations

as they came from the Commission. We have taken a different approach and gone for substantial consultation. As you said, there are also other considerations for allowing bodies to prepare themselves for the coming of the regulations. For example, training on the changes to legislation is a key area. We have worked quite closely on that in partnership with stakeholders and produced a comprehensive training package that covers all the main changes. The material that has been produced as a result of that is available free for anybody to use.

Our activity has been informed by the procurement supplier group, which has representative membership interests. We are working on a range of measures, including updating the advertising tools that are used by suppliers to bid for public contracts. The procurement journey, which is a web-based support tool, is also being updated. Going even further than the web-based materials and other free materials, we are working in partnership with the supplier development programme, which is a third-party organisation, to develop a series of roadshows for suppliers.

In addition, we have had face-to-face training sessions in Glasgow, Edinburgh, Aberdeen and Inverness, and we hope to have events in Shetland and Orkney. All that underlines why it is wise to take some time to ensure that we bring stakeholders with us through consultation and provide as much notice as possible through training to ensure that suppliers and public bodies are as ready as they can be. I think that that vindicates our taking the time that we have done.

The Convener: What will be the key advantages of the different areas of reform that are being introduced?

Keith Brown: There are a number of changes—probably a whole host of them—from what has happened before. In one sense, there is more regulation that is building on previous regulation, but some of it will make things more transparent and easy to understand. In my opening statement, I mentioned the attempts that we have made to get consistency and clarity in regulations. However, a number of different things will apply right the way through. For example, there is the broadening of the definition of “supported businesses”; if we treat that in the right way, it will be an advance on where we were before. I also mentioned the ways in which we can arm public bodies to take decisions when, for example, a supplier has not been paying tax or complying with environmental legislation, or has been involved in blacklisting. That is one of the areas that show marked progress from where we were before.

There are substantial new benefits right through the different provisions. Reform has not come out of the blue—the Commission, whatever it is sometimes accused of, ponders such matters and is approached by the supplier side and public authorities. What the Commission has produced has been reflective of that, and we are just trying to see it through to make things a bit clearer and more consistent.

Mike MacKenzie (Highlands and Islands) (SNP): Good morning, cabinet secretary. I think that you have anticipated the questions that I had in mind to ask. However, you touched briefly on the different approach that the Scottish Government is taking compared with that of the rest of the United Kingdom and possibly other parts of Europe. Can you explain that a wee bit more?

Keith Brown: The most substantial difference between the Scottish Government and the UK Government is probably that we did not simply copy out and replicate the regulations as they came to us. We have taken an approach that is based on the Scottish model of procurement, which seeks to balance out cost, quality and sustainability. I think that I am right in saying that contracts down south might very often be awarded on the basis of price alone, whereas we have taken a different approach and made sure that quality is always part of the picture, although the extent to which the balance is drawn in that regard varies. The Procurement Reform (Scotland) Act 2014 introduced a sustainable procurement duty and a requirement to consider community benefits in major contracts. That is something that we have used for some time, but the regulations will take it a stage further.

Other member states have national legislation on lower-value procurement but have tended simply to extend the provisions in the EU directives. We have tried to introduce a more sensitive regime with a stronger focus on sustainability, organisational strategies for higher-spending bodies and performance reporting.

Unlike the UK regulations, our proposed regulations make it a requirement that any company that admits that it has blacklisted workers or has been found to have breached blacklisting legislation will be barred from bidding for public contracts. That is another example of our taking a different approach from that of the UK.

09:45

Mike MacKenzie: I am very glad to hear you talk about community benefit being a consideration, and about quality rather than just price. I am sure that many members frequently

receive complaints from suppliers and contractors who feel excluded by the current procurement process, and it often strikes me that companies that miss out in that regard tend to be not the worst suppliers or contractors but the ones who are not best at engaging with the procurement process.

I am pleased to hear you talk about training and about going as far afield as Orkney. Procurement is a notoriously complex area. Is there room for a degree of simplification? Will training give more local suppliers and contractors the benefit of a better understanding of the procurement process, so that they no longer feel as excluded as they currently do?

Keith Brown: First, I think that we have to consider whether the procurement regulations, of which there is a substantial body, are there for a good purpose, and I think that they are. You are right to say that the area is quite complex and that understanding it can present more of a challenge for a smaller company than it does for a larger company, but that does not mean that we should not have the body of regulation that we have. The only way to remedy that is by giving as much assistance as possible, through training and face-to-face discussions, as I said.

We must also be proportionate. The environment in which people bid must be proportionate to the size of the contract. We try to provide for that, by making a division between higher-value and lower-value contracts.

You are right to suggest that the broader definition of sustainability must include a healthy small and medium-sized enterprise sector. For a long time, under the old private finance initiative regime, as a councillor I was constantly being approached by companies who felt that they had no chance of competing for large PFI contracts, because of all the legal and financial expertise that was required.

Through the regulations, and through the portal for applying for public contracts, for example, we have tried to simplify things. I am sure that we are not at the end of that process, and we will constantly attempt to make the process as easy as possible, and as appropriate and proportionate as possible to the contracts that we are offering. By and large, it is right to have the regulations in place, but we should make it as easy as possible for people to comply with them.

Mike MacKenzie: Will you share with the committee more details of the proposals for training, meetings and so on, which I am sure will be of particular interest to suppliers across Scotland?

Keith Brown: I have talked about what we have done and how we have done it, and I am happy to

provide the committee with more detail in writing about the training that we have been doing. I think that the Orkney and Shetland arrangements have not been finalised, but as soon as they are we can share them with the committee and let you know exactly what we have been doing.

Mike MacKenzie: Thank you.

Alex Johnstone (North East Scotland) (Con): Compliance with the new regulations will inevitably have cost implications. Must public bodies and third sector organisations just absorb the extra costs, or can such bodies be provided with support in the transition period and with the on-going costs?

Keith Brown: As I said in response to Mike MacKenzie, the training seeks to do that by helping to make things as easy as possible for contractors. The procurement legislation on which the regulations build has been in place for many years. Indeed, the first directive goes back to 1971, and it is 10 years since we have had our own procurement legislation to give effect to the EU directives. The main instrument that we have introduced—the Public Contracts (Scotland) Regulations 2015—replaced public contracts regulations from 2012; the 2016 regulations also replace regulations from 2012.

Under the new regime, the cost implications for buyers and suppliers, who I think are the subject of your question, should not be different from what has gone before. That does not mean that we should not always try to minimise the cost implications.

On the impact of the Procurement Reform (Scotland) Act 2014, the aim has been to embed the use of systems and policies that are already in place. We are not trying to bring in new requirements and make wholesale changes to the current system. A lot of what we are doing builds on the current system.

I think that issues such as cost have been taken into account, and—to be fair—I think that the Commission also takes the issue into account when it comes up with proposals. We seek to build that into what we do.

To return to the previous point, we want to ensure that the contract opportunities that are available to companies are transparent and readily accessible for SMEs and third sector organisations too. Sustainable procurement, in the broadest sense of the term, can be achieved if we do that, which will give us a healthy mix and real competition.

There are costs attached to the proposals—there is no doubt about that—but we can probably continue to reduce those costs. I think that companies themselves will do that as they

become more aware and increase their expertise over time, and we can help through the training that we have offered.

Clare Adamson (Central Scotland) (SNP): Good morning, cabinet secretary. You mentioned time as one of the themes that came out of the Government's consultation, and you described the adaptations that you have made to the introduction and timing of the regulations. Did any other themes emerge during the consultation?

Keith Brown: Yes. A number of themes emerged, some of which I mentioned at a previous meeting of the committee. What surprised us was that our proposals were—in every case bar one, I think—very much supported by the consultees. Between 80 and 90 per cent—in some cases up to 96 per cent—of consultees were in accordance with proposals on, for example, allowing the maximum possible discretion for low-value contracts. A predominant theme that emerged was that public bodies want maximum discretion. In some cases—in the vast majority of cases, in fact—we have agreed with that. In one case—that of blacklisting, as I have mentioned—we have gone further than the consultees wanted us to.

One of the officials might want to come in at this point—in fact, Susan Duncan has never been to a committee before, so she might want to say something about the main themes. [*Laughter.*]

Susan Duncan (Scottish Government): Cheers, cabinet secretary.

Consistency and proportionality were the key themes. Organisations in various sectors—local authorities, for example—were very keen that we did not add any new bureaucracy or place additional burdens on them. It was therefore important that, through our legislation and in our statutory guidance, we took a proportionate approach that would allow organisations to make decisions that are relevant to them and their areas.

Interestingly, one theme that emerged from national health service bodies was the need for more guidance on procedural rules. We have therefore adapted our procurement journey as a tool to assist buyers and suppliers with regard to how the new rules apply in practice.

Sub-sector organisations and union representatives raised the issue of a living wage, and we have been able to tackle that issue significantly through our legislation and statutory guidance.

The Convener: We will definitely have to have you back.

Clare Adamson: That was a comprehensive answer—thank you.

You mentioned blacklisting; the convener opened the door on that issue earlier in the meeting. Do you have concerns, given the UK Government's direction of travel in terms of anti-trade-union legislation, about the impact of potential Brexit—as it is called—on some of the protections that you have been able to put in place?

Keith Brown: The main concern relates to the fact that, in recent years, European regulations have allowed us to focus increasingly on issues such as blacklisting and—as Susan Duncan mentioned—the living wage, although we cannot quite go further. When I previously appeared before the committee, we discussed at some length whether we could impose a living wage. The conclusion—certainly mine and perhaps the committee's—was that the existence of national minimum wage legislation in the UK actually prevents us from imposing living-wage regulations. It is interesting that if there was no national minimum wage—which is set too low to be a living wage, in our view—we could impose a living wage.

In recent years we have seen the EU trying to come to terms with those issues. Some people think that the EU should not be involved in such things and that its being involved is not right and places a constraint—

The Convener: I would like clarification. I believe that the situation that you have outlined with the living wage would be the case regardless of whether the minimum wage was devolved or reserved. Is that right?

Keith Brown: In my understanding of the European legislation, if a body—either regional or national, as the EU specifies—stipulates a minimum wage, that means that the Government is not allowed to set another separate constraint in the form of a living wage. A recent German ruling that highlights the situation. I return to the point that Brexit would mean lack of certainty that the move towards a living wage would continue.

I probably share Clare Adamson's view. We do not have the same view as the United Kingdom Government on anti-trade-union legislation, and it would be extremely worrying if we were at its mercy alone in relation to that.

Clare Adamson: Thank you.

Alex Johnstone: We have heard about the consultation, but can you tell us a bit about how buyers and suppliers have reacted to the new rules? Are they content?

Keith Brown: As I said, the consultation process allowed us to talk to suppliers—I have mentioned the forums in which we engaged with them throughout the process, including networked

events, meetings of the existing strategic forum and individual meetings. As Susan Duncan said, suppliers consistently mentioned the need for flexibility, consistency and proportionality; we can agree with them on that and I can see the logic. We also have regular discussions with suppliers outwith that process, and they want to know that what is in place will be there consistently, and that what is asked of them will be proportionate to what they are undertaking. They also want maximum flexibility, which I understand.

Training is important, so we have put in place measures to meet demand for it. We are also in discussions with the supplier development programme to see what support we might be able to offer in respect of further training for suppliers. We have been going with the grain of what suppliers have said. That is how we approached drafting of the regulations and preparation of the statutory guidance. There are bound to be things on which we disagree, but we have worked with the grain of what suppliers have asked for, in this case.

Alex Johnstone: Thank you.

Adam Ingram (Carrick, Cumnock and Doon Valley) (SNP): Good morning, cabinet secretary. I am particularly interested in supported businesses, which you mentioned in your opening remarks. I recall that, when we scrutinised the legislation two or three years ago, there were a number of discussions about how best we can support such businesses, given that a lot of public bodies have not gone out of their way to do that.

I was interested to hear that you had experienced some resistance to what you were proposing. Will you flesh that out for us and say why you believe you are taking a step forward in support for supported businesses?

Keith Brown: Sometimes, one person's opportunity is perceived by another as a threat—for example, some people have viewed the potential ambiguity in the definition of "disadvantaged person" as a threat. In my experience, the bigger issue—even outwith this process—is about awareness.

Some companies would not like a situation in which a process is ring fenced for supported businesses. That is bound to be the case, for example where companies have a commercial interest and see a missed commercial opportunity. We have seen some traffic in relation to that. A bigger point, however, is that I have the impression that many businesses—this is sometimes true of public authorities as well—are unaware of the opportunities that they can access through supported businesses. Also, the supported-business sector has a job of work to do

to ensure that what it offers is much more widely known.

The biggest issue was perhaps the perceived ambiguity in the need for 30 per cent of the workforce to be disabled or disadvantaged people. The term "disabled" can be ambiguous, but people have a broad understanding of it. "Disadvantaged" provides more ambiguity, so we have sought to address that in the regulations. That is probably the main gripe—if there has been one—in respect of supported businesses and disadvantaged groups.

10:00

Adam Ingram: Will you be able to evaluate the legislation in terms of the number of contracts that are awarded to supported business and the like? Can that be monitored?

Keith Brown: We do that. Given that we do, there is then the question what we do if the legislation is not having the desired effect. As I have said, however, I have a feeling that that will rest outwith regulations and that it will be much more about proselytising to organisations.

Susan Duncan might wish to say something more about that.

Susan Duncan: The Procurement Reform (Scotland) Act 2014 contains two provisions in that respect, the first of which is the requirement on buying organisations to think about the sustainable procurement duty. Part of that requirement—it is a genuine requirement—is about facilitating access not only for small to medium-sized enterprises and the third sector, but for supported businesses.

Secondly, there is a requirement on organisations to report annually on their procurement strategy commitments and how they have met their obligations in that respect. That will provide an ideal opportunity for us to monitor compliance and whether we are increasing use of supported businesses.

Keith Brown: Incidentally, it is also true that much of what we are proposing in the regulations relates to things—blacklisting and tax avoidance, for example—that we want to look at in due course, so we will have opportunities to come back and revise policy in the light of experience. We will seek to monitor all the different aspects, including the one that you mentioned.

Adam Ingram: Thank you.

David Stewart (Highlands and Islands) (Lab): In your opening remarks, you touched on tax avoidance. Obviously you read the *Official Report*, because I raised the point last time round. Are you able to give the committee an estimate of the

amount of money that is lost every year in Scotland to tax avoidance?

Keith Brown: No, I am not. After all, we do not have the responsibility for collecting corporation tax. I am not aware of any such figure, and I do not think that the officials would have that information.

David Stewart: The excellent campaign that is being run by organisations including Christian Aid, the Scottish Trades Union Congress and Unite Scotland with which you will, of course, be familiar, has come up with a figure of £25 billion for the amount that is lost per year in the UK. A rough estimate for the amount that is lost in Scotland, therefore, would be around £2.5 billion, which is an immense sum of money. Given the new tax powers that it will have, is the Scottish Government trying to estimate the amount that is lost to tax avoidance? It will be very difficult to work out how much you are not getting, but clearly you will be able to do some estimates. Is that something that you can look at in the future—in particular with regard to large organisations that have global reach, such as Amazon, that do an excellent job in Scotland but about which there have been criticisms with regard to tax avoidance and the amount of tax that they pay?

Keith Brown: That would be John Swinney's responsibility, not mine. I agree with David Stewart about huge companies that seem to manage their own tax rates and by so doing offend public perception. It is certainly a very serious issue, but I say again that corporation tax is not going to be one of this Parliament's responsibilities any time soon. However, to come back to the regulations for a second, we are trying to give public bodies that are aware of, and that have evidence of, illegal activities the opportunity to take action to preclude such companies from competition. That is an important step forward.

David Stewart: Are you able to identify the number of companies that have, in the past 12 months, been excluded from public procurement because of tax avoidance?

Keith Brown: No. We do not keep records of every contract that is done by every public authority, so we do not have that information. We provide the basis in terms of regulations and the environment, but we do not have details of every public authority's contracts with companies.

David Stewart: You will, however, know about the companies that the Scottish Government procures from; after all, you have the responsibility in the Scottish Government in that respect. In how many Scottish Government contracts did you exclude companies for tax avoidance?

Keith Brown: I have no knowledge of that. I ask my officials to respond to your question.

Alasdair Hamilton (Scottish Government): I am not aware that we routinely measure that information, but we can certainly take your question away and get back to you on it.

David Stewart: Would zero be close to the mark, as a wild guess?

Alasdair Hamilton: I would not like to speculate.

David Stewart: Can you provide that information to the committee? If the information is not being kept, cabinet secretary, I suggest that it be kept, because you cannot monitor things that you do not know anything about. Obviously this is a huge issue—

Keith Brown: Are you aware of any such companies?

David Stewart: Well, as has been said, we are asking the questions. It is important to identify what is going on. Obviously the campaign that I mentioned has given us some information, but I am really interested to find out from you whether the Scottish Government has excluded companies for tax avoidance. After all, you said at the start—rightly so—that you have a strong philosophical opposition to such activity. I appreciate that comment, but at the end of the day it is actions that count, and it is clearly important that we try to look at the issue. I would certainly appreciate it if you could supply the committee with that information.

My final point is on further reforms to the public procurement regime. I will raise an issue that I know Mark Richards is interested in. When I went to Brussels last year, to the maritime affairs division, officials mentioned that the new procurement regulations that affect all European countries, but particularly Scotland, are what they would call "Teckal friendly". For those who have not come across that obscure regulation, it basically provides the occasional opportunity for public bodies, for very good reasons—with which I will not bore the committee or witnesses—to avoid the procurement process. The new regulations are seen as Teckal friendly in that they make it easier for the Scottish Government and local authorities in what I appreciate are the very rare opportunities when Teckal exemption is possible. Is the cabinet secretary aware of that? If not, perhaps he could do a note back to the committee on whether the new regulations are more Teckal friendly than the previous regime.

Keith Brown: Yes, we will do that note and yes, we are aware of the extent to which the regulations directly change that, although I do not think that they change it substantially.

I come back to my previous point, and I will do so without making it a question, if that helps. I

hope that any individual or public body that has information on tax-avoiding companies would pass that information on to the Government or the relevant public authority so that we can take that information on board.

I am happy to write to the committee on the points that were raised in the previous question and in relation to Teckal exemptions. I am not aware of any contracts—obviously I do not have an encyclopaedic knowledge of all contracts—in which that would have a material effect, but it is something that we will bear in mind in the future.

David Stewart: I do not expect the cabinet secretary to have an encyclopaedic knowledge, which is why I asked him whether he could write back to the committee. I do not doubt the cabinet secretary's principled stance on tax avoidance; I am merely saying that what is needed is action, and the first thing that we need is a system for recording tax-avoidance exclusions. I do not expect the cabinet secretary to know which local authority contracts have been rejected because of tax avoidance, but I would expect the Scottish Government to make a note of tax-avoidance exclusions from its own contracts. That is a fair and reasonable point—perhaps not for the cabinet secretary but, in a corporate way, for other members of the Cabinet. Obviously, I do not have inside information on contract awards, but we are taking evidence from you, so I was merely asking you to respond to that issue.

I welcome your comments on Teckal exemption. My information came from the European Commission, but clearly you have a view on that as well.

Keith Brown: On tax avoidance/evasion, a couple of contracts have come up recently in which there was the possibility that a company had been doing something illegal; I will not name the contracts. However, we investigated and found that no illegal activity had taken place. Of course, it is important that we keep an eye on that. We take it into account, and I will write back to the committee with any instances that we can dig up to confirm that.

David Stewart: The campaign group that I mentioned earlier makes the understandable point that companies that wish to benefit from the public purse should pay their fair share of tax. Do you share the campaign's views?

Keith Brown: Absolutely—but I return to the reason why I am here today, which is the regulations. Such campaign groups also say that the best result in such circumstances is to have the tax paid. That underlies the approach that we have taken in relation to some of the provisions.

There is also an obligation under the regulations such that, if an organisation that has transgressed

has what is called “self-cleansed” and has taken action to mitigate or make reparation for what it has done or not done previously, we have—whether we like it or not—to take that into account. Obviously the intention has to be to ensure that everybody pays their fair share of tax. I think that the regulations will help us to achieve that.

David Stewart: Finally, I think that we share the same objective, which is behaviour change in large companies that use their global reach to avoid paying tax in individual countries—which hits the public purse in Scotland, as it does in England and the rest of the United Kingdom. If we can get behaviour change by those companies—in other words, if they pay their fair share of tax—they can get their fair share of procurement contracts. If they are not paying their fair share of tax, they should not be getting public contracts from the Scottish Government or local government in Scotland.

Keith Brown: Also, if everyone pays their fair share of tax, there are likely to be more contracts and more business for people.

Alex Johnstone: I am not entirely convinced that the questioner and the minister have been truly honest about the distinction between tax avoidance and tax evasion during the past 10 minutes. I am left extremely confused about what we have been talking about.

The Convener: Mr Johnstone, I do not think that anybody in this committee is deliberately dishonest.

Alex Johnstone: I am not suggesting that that is the case. I am suggesting that perhaps there has over the past 10 minutes been a misunderstanding about the difference between tax avoidance and tax evasion. Therefore, I do not understand what we have been discussing.

The Convener: Do you want to elaborate on that point?

Alex Johnstone: Tax avoidance is an accounting practice that is entirely legal, while tax evasion is an illegal activity that takes money out of the public purse that should not be taken, and it should be pursued through the courts. We have unhelpfully blurred the distinction quite blatantly over the past 10 minutes.

The Convener: Would you like to comment on that, cabinet secretary?

Keith Brown: I will if I may, thank you, convener. I do not think that I have blurred the distinction. I tried to point out—perhaps not very explicitly—that there is a distinction between the two, and I mentioned both the terms. I tried to point out that public authorities can take action where it is found that a company has contravened the law. That goes exactly to the distinction; a

company will not be hauled up before the court for tax avoidance, but could be for tax evasion. I tried to draw that distinction—I was not intending to be dishonest.

I have to answer the questions that are asked—as David Stewart has pointed out, I cannot ask my own questions. I understand the distinction that Alex Johnstone made and it is very evident in the regulations. By and large, authorities will not be able to take action on things that are not illegal. That is laid out in the regulations.

The Convener: Just for clarity, cabinet secretary, I say that the committee welcomes ministers and cabinet secretaries asking questions as part of constructive dialogue, so we will not be too strict on that one.

Adam Ingram: I commend the Government for introducing procurement reform—in particular, for the desire to drive up standards in companies that are awarded public contracts. You mentioned blacklisting and the living wage. To what extent do employment practices in general come under the scrutiny that is part of the awarding of public contracts? We are all aware that some employers are better than others. There is a range of employment tribunal decisions and other instances with regard to redundancy practices and that type of thing. Do you intend, as part of the process, to raise companies' standards in respect of how they employ their people and so on? Is that in your minds in introducing the regulations?

Keith Brown: That is on our minds. Even before the regulations, it has been very prominent in our thinking. We now have more discretion to capture those concerns in a procurement process. I mentioned the living wage; it tends to be termed in a different way when you go through the procurement process. I think it is fair to be clear and absolutely honest that procurement is not the best tool for dealing with blacklisting and the living wage. Employment law is the best tool for that, but we have no powers in relation to employment law, which is reserved.

However, a great deal can be achieved. The biggest contract that we let is for ScotRail services, which is worth about £8 billion. We managed in that contract to achieve a great deal on redundancies and on the living wage—not just for people who are directly employed under that contract but for subcontractors. We can achieve a great deal, but it would be much easier to achieve those things had we control over employment law. I ask my officials whether there is anything else worth mentioning on that.

Susan Duncan: I can probably add to that. There are two areas in which the new legislation and supporting statutory guidance assists with employment practice. There is an expectation,

naturally, that suppliers are complying with the law, and non-compliance with social, environmental and labour law is now an exclusion ground.

To go further than that, the statutory guidance that was published earlier on fair work practices—including the living wage, which the cabinet secretary fast-tracked—identifies ways in which a supplier's engagement with its staff can have a genuine impact on the quality of the goods, works or services that are procured. We recognise that there is a correlation between those things. The guidance goes further and sets out exactly how buying organisations can factor in such issues as part of the procurement process. We are seeing that coming through in the contracts that are being awarded, including the one to which the cabinet secretary referred.

10:15

Keith Brown: To go back to an overarching sustainable procurement approach, I say that it is true that procurement is not sustainable if a contract is won on the basis of third-world employment conditions. It will not work. I cannot point to a specific part of the procurement regulations that says that we will not award such contracts but—this is true not for all contracts but for the bulk of them—if what is proposed includes terrible conditions for staff, even if it complies with the law, and the conditions are so bad that the contract does not seem to be viable, the parts of the regulations that have been mentioned will allow us to take that into account. Increasingly we are able to do that.

That is coming at the issue from the side, however; the best way to deal with that issue is through employment law.

The Convener: Thank you and your officials for your very helpful evidence and your commitment to furnish the committee with more information.

Agenda item 2 is formal consideration of motion S4M-15451. The committee is invited to recommend approval of the draft Procurement (Scotland) Regulations 2016.

Motion moved,

That the Infrastructure and Capital Investment Committee recommends that the Procurement (Scotland) Regulations 2016 [draft] be approved.—[*Keith Brown.*]

Motion agreed to.

The Convener: That concludes consideration of the affirmative instrument. We will report the outcome of our consideration to Parliament.

10:17

Meeting suspended.

10:20

On resuming—

Forth Road Bridge Closure

The Convener: Under agenda item 3 the committee will take evidence in its inquiry into the circumstances surrounding the closure of the Forth road bridge.

I welcome Derek Mackay, Minister for Transport and Islands at the Scottish Government, and Roy Brannen, chief executive, Mike Baxter, director for finance and analytical services and Wayne Hindshaw, chief bridge engineer, all at Transport Scotland.

I invite the minister to make an opening statement.

The Minister for Transport and Islands (Derek Mackay): I thank the committee for the opportunity to attend this important inquiry and set out the Scottish Government's position on the matter.

I welcome the inquiry, as I have always encouraged transparency on the matter. I recognise fully the impact that the closure had on the travelling public, local and national business and, in particular, those in the haulage industry who were inconvenienced, and I remain grateful for their patience and support.

As indicated in my parliamentary statement on 8 December, the available evidence and expert opinion provided demonstrate that the truss end link defect could not have been foreseen. I hope that we can agree that the decision to close the bridge was appropriate, reflecting the paramount importance of safety. As the bridge experts agreed, the subsequent response has been "a remarkable achievement".

As with other organisations with asset management responsibilities, the Forth Estuary Transport Authority's use of a long-term programme allowed certain projects to be prioritised for funding, reflecting the urgency of the work required and how it would impact on the integrity of the structure.

FETA's system of general and principal inspections was developed to reflect the Forth road bridge's unique characteristics. Inspections were based on good industry practice, with an enhanced methodology developed by FETA using a risk-based approach, meaning a more rigorous inspection regime that exceeded Department for Transport guidelines.

Amey has continued to use the same well-tested FETA procedures, with the same experienced staff. The early identification of the defect was as a direct result of that competent

regime and the familiarity that the staff had with the structure of the bridge and was a credit to those involved.

Prior to its dissolution, FETA had full responsibility for all operational and maintenance aspects of the Forth road bridge, including the prioritisation of its work programme. FETA's governance was such that the work programmes were approved by its board.

When tolls were removed and FETA became reliant on Scottish Government funding, it was required to bid for funding through the spending review process. It is clear that FETA had to adapt to new ways of working. Notwithstanding, the Scottish Government ensured that funding was provided to meet FETA's committed spend and that capital maintenance was delivered on a prioritised needs basis. Funding for safety-critical work was never refused by the Scottish Government and FETA considered issues such as the truss end links to be manageable.

FETA operated independently and employed its own hierarchy of risk. While the bridgemaster's board papers referred generally to truss end links, the need for associated work was not considered a significant risk nor accorded a safety-critical or high priority.

The inquiry has also heard about Amey's response. The strengths that the new operating company demonstrated are a direct outcome of Transport Scotland's thorough assessment of the contract procurement process and the skills and experience of Amey and its partners, which the committee has had sight of and have proved extremely efficient.

The protections afforded to FETA staff and the ministerial commitment on staff pensions, welcomed unanimously by both the FETA board and management, and staff and trade unions, played an important part in providing continuity of experience during the crucial mobilisation period, ensuring that all FETA staff in post in May 2015, including the bridgemaster, transferred to Amey.

From 2007, FETA undertook major works including main cable investigation, cable band bolt replacement, anchorage investigation, viaduct bearing replacement, improvements to deck half-joints and the dehumidification system, and a number of other schemes. FETA deemed virtually all as being more pressing than the postponed and unrelated full replacement of the truss end links.

A total of £107.8 million has been spent on the bridge in that period, equating to more than £110 million, including reserves. That is not a record of underinvestment.

In summary, the evidence presented to the committee, often from witnesses with quite

different perspectives, has demonstrated that the structure has been well maintained, using good industry practice, that the defect that resulted in the bridge closure was unforeseen and unforeseeable, and that ministers' approval of Amey's proposal to close the bridge for a short period to carry out essential repairs was appropriate and necessary.

Members will be aware that the bridge is fully operational. I would again like to pay tribute to all the staff involved for the swift and dedicated actions undertaken in often challenging circumstances. I welcome any questions from the committee.

The Convener: Thank you very much, minister. I will hand over to David Stewart to kick off our questions.

David Stewart: Good morning, minister. On behalf of the committee, I would like to echo your words about the work of the staff. As you know, a number of committee members went to the bridge and we met some of the staff. Perhaps you could relay our comments to all the staff involved.

My first few questions are about the decision making around the bridge's closure. As you will be aware, most of the closures outwith the current emergency are because of high winds. In the current regime, who makes the decision to close the bridge and what is the chain of command?

Derek Mackay: Are you asking about closures more generally and not this individual closure?

David Stewart: Yes, that is correct.

Derek Mackay: Decisions are based on forecasts and the information available. David Stewart will be well aware that more exposed structures, such as bridges, have specific monitoring equipment. That then informs about the weather and particularly high winds. If predetermined levels are hit, that leads to warnings and a hierarchy of closure and restrictions on different vehicles crossing the bridge. That is conveyed to the public through variable message signs, as well as through Twitter, Traffic Scotland and other broadcast media.

The process in place is almost automated, because of the criteria that are set. Ultimately, decisions are based on the local information—the data on the high winds experienced on the structure, as well as the wider weather warnings—through Transport Scotland.

David Stewart: Thank you for that useful answer. I suppose that I am trying to identify the specific individuals who make the decision. Is it the bridgmaster or the head of Transport Scotland? Is it you in your role as lead minister, the Cabinet Secretary for Infrastructure,

Investment and Cities or the First Minister? Who is ultimately responsible for a closure in a high-wind scenario?

Derek Mackay: Roy Brannen can answer that.

Roy Brannen (Scottish Government): I will just add to what the minister said. Ultimately, it is the organisation that is responsible for the bridge. In the case of our other long-span bridges, that would be the operating company. In the case of the Forth bridge, before the dissolution of FETA, it would have been FETA and Barry Colford; after 1 June 2015, it was Amey. FETA's procedures were well documented. Those have followed through into the new Forth bridge operating contract and Amey triggers the thresholds based on the weather forecasts.

David Stewart: If, for example, there was high wind—70 mph and above—Amey's head official on the bridge would be the person responsible for making a closure decision.

Roy Brannen: Correct.

David Stewart: Obviously, the Amey official would copy in the minister and—

Roy Brannen: A whole procedure is in place on what Amey must do when the threshold is reached. The individual would then make a number of calls, including to the Scottish Government and Wayne Hindshaw, the chief bridge engineer. Everybody is made aware at that point of what is happening. The key part is communicating all that to the public.

10:30

David Stewart: I appreciate that; it is helpful and clear.

Perhaps we can go back in history to clarify assumptions that I have that might be correct or incorrect. There were really two periods of FETA, were there not? In terms of decision making, there was FETA when we had tolls and FETA after tolls. Am I right in thinking, minister, that decisions to close the bridge when FETA was responsible during the tolling regime would have been taken by the bridgmaster and that only he would have had the power to close the bridge?

Derek Mackay: Yes.

David Stewart: That was my understanding, but I just wanted to clarify it. Obviously, there was a change post tolls. As you will know, we have had evidence from FETA about that. In the scenario of high winds or whatever, who was then responsible for closing the bridge? Was it FETA and the bridgmaster in conjunction with Transport Scotland? Or was it only FETA and the bridgmaster?

Wayne Hindshaw (Scottish Government): Perhaps I can respond. The decision would have been the bridgemaster's alone. That decision was FETA's responsibility up until the day FETA was dissolved. However, it worked closely with Traffic Scotland and Transport Scotland. There was a seamless interface to ensure that closure information was publicised and passed out. There are five wind thresholds—if the committee wants to know about them, it can—but the bridge is closed to all vehicles when the wind speed is 80 mph. If the bridge is closed, that information is shared with Transport Scotland. Our permission was not sought when the bridge was closed, nor was it necessary to seek it, but we were informed so that we could put into operation the standard incident diversion routes and publicise that.

Roy Brannen: Just to add to that, during the process of transfer, Barry Colford, his team and the board were particularly concerned about operational and maintenance issues—and, indeed, corporate governance—moving away from them to Transport Scotland. They sought assurance from the minister at the time about that and got it, so operational and maintenance issues and corporate governance remained with Barry Colford and the chief bridge engineer.

David Stewart: Can you also clarify, minister, whether I am correct in thinking that there was a period during the transfer from FETA when there was a change and the bridge was designated as a trunk road? Or was it always a designated trunk road in terms of transport regulations?

Wayne Hindshaw: If I may, I will respond to that. The bridge was trunked on the day that FETA was dissolved; it was not a trunk road before that. It was under the FETA act, shall we say, as FETA was the road authority under the Roads (Scotland) Act 1984. Once the bridge was trunked at one minute past midnight on 1 June, it then became the responsibility of the Scottish Government.

David Stewart: My assumption was right, then: there was, in effect, a trunk road designation on 1 June last year. Is that correct?

Wayne Hindshaw: Yes.

David Stewart: Thank you. It is useful to get these practical points confirmed.

I will move on to the current closure situation. Again, minister, I am talking about decision making. I will just run through this—and I do not know the answer to the question. The decision to close one carriageway of the Forth road bridge was made on 1 December. That followed discussion between Amey and Transport Scotland. The decision to close the bridge to all traffic from midnight on 3 December followed a recommendation by Amey at 4 pm that day. Can you confirm whether that is—

Derek Mackay: No. You were right to begin with, in that a fault was identified on 1 December. That led to a carriageway closure, as you described. There was further inspection and study of the issue and engagement of consultants in monitoring the failed link member—there were ongoing meetings—leading to 3 December. Transport Scotland and Amey were obviously closely engaged. The point of decision was your only inaccuracy, Mr Stewart. There was a meeting of ministers in the evening of 3 December at about half-past 8 involving the First Minister, the Deputy First Minister, the cabinet secretary and me, and at that point information and a recommendation were presented to ministers for the first time. Within minutes of a ministerial agreement that the bridge should be closed, that was conveyed to the media. It is not the case that a decision was taken earlier in the afternoon and conveyed later; it was conveyed within minutes in the evening.

David Stewart: I do not necessarily disagree with you minister, but I did not quite finish my sentence earlier and the point that I was going to make is that the decision did not take effect until after the meeting with the First Minister.

I appreciate that it was an emergency situation rather than a standard high-wind closure. What I am asking, in line with my previous questions, is whether the decision to close the bridge was taken by the First Minister, the cabinet secretary, you or Amey. In that scenario, where did the buck stop?

Derek Mackay: The recommendation to ministers came from officials and the operating company, Amey, and we all agreed—it was a unanimous decision across the operating company, Transport Scotland, advisers and ministers—to close the bridge and embark on the next course of action. As you will appreciate—we may come on to this—we realised that it was not just a question of closing the bridge but that much more needed to be done on contingencies, conveying the message to the public, repairing the bridge and getting a full understanding of what had happened.

David Stewart: Thank you. You kindly invited the committee and officials to attend a technical briefing, which the convener, I and Mr Johnstone and officials attended. That was very helpful and useful. At that briefing, Mr Johnstone asked whether use of the bridge would be restricted or unrestricted when it reopened, and the answer—Mr Johnstone can clarify this—was that, when the bridge reopened, access would be unrestricted. Can you explain why in December access was going to be unrestricted, but was restricted when the bridge reopened? Why was there that confidence in December—I think that it was December—but not in January?

Derek Mackay: As the repairs were undertaken and there was further investigation, we gained a deeper understanding of what went wrong on the bridge. Further inspections and monitoring equipment on the bridge—monitoring equipment that was not there before, such as the strain gauges and tilt meters—informed our understanding of what went wrong. With all that equipment in place and that deeper understanding, we were able to make even better-informed decisions about what went wrong, how we could remedy it and what we should do next.

The bridge is now fully operational, as it was before the closure, and there are no restrictions. On 23 December, we returned about 90 to 91 per cent of general traffic, excluding heavy goods vehicles, to the bridge. The reason why HGVs could not go over the bridge was that, although they make up only about 9 per cent of the traffic, they account for 30 per cent or so of the weight load.

When the repairs were being carried out, there was further monitoring and examination, and we gained a deeper understanding through the use of the monitoring equipment. As I was able to outline at a technical briefing, it suggested that—as we all now know—the issue related to a pin that was not rotating, which put stress on the member. We inspected the other pins and found that two other pins were not rotating as we would have liked, which could have put stress on other members; therefore, it was a matter of precaution that we completed all the repairs before we could satisfactorily allow HGVs over the bridge.

There was an incremental return of traffic. The pressure was on to get all traffic over the bridge as quickly as possible while never compromising safety. However, as we learned more about the nature of the fault and the stress and pressures on the bridge, and when we found out that two further pins had not been rotating, we took that precautionary approach to ensure that no further damage was caused to the bridge. We ensured that traffic could cross safely and that HGVs could return in good time. It was a well-informed, precautionary approach that involved completing the repairs and strengthening the bridge to the point at which we were satisfied that no further damage would be caused.

We could go into even more detail of our understanding of the fault, based on the findings of the strain gauge, the acceptable parameters, the load testing and the model case scenarios. I would be happy to go into those details, and I am sure that Wayne Hindshaw would join me.

In essence, the answer to your question is that we understood more about what required to be done as we applied more technology to the bridge and gained a deeper understanding of the fault,

which was unforeseen, and we did what was the right thing to do to protect the structural integrity of the bridge.

David Stewart: The bridge is now fully open to HGVs and, if my memory serves me correctly, the maximum weight of an HGV is around 44 tonnes. However, when we were given our technical briefing, we were told that abnormal loads—such as when a wind turbine is being moved—might be up to 150 tonnes. Have there been any discussions with your technical officials about whether there might be restrictions on abnormal loads that are above the HGV weight limit?

Derek Mackay: Mr Stewart raises a valid point. There is one example from the past few years of such an abnormal load crossing the bridge. Such things could be done by arrangement before the bridge closure, and that remains the case now.

Wayne Hindshaw: In February 2015, the bridgemaster introduced a weight limit of 150 tonnes for abnormal loads. He would not permit vehicles over that weight to go over the bridge, because of concerns about the strength of the brackets and welds in the towers that support part of the truss end link mechanism. That relates to the works that FETA trialled, which Amey has completed. We are now back in the situation that we were in before 1 December, in that abnormal loads of up to 150 tonnes can apply to be moved across the Forth road bridge. Those are not an issue.

Periodically, abnormal loads go well beyond that into several hundreds of tonnes. The issue is not that the bridge may not be able to take them, but they may have to be specifically analysed and traffic arrangements might need to be put in place so that they are led across the bridge under what we call caution, which means that there would need to be no other traffic on the bridge, low winds and moderate temperatures.

Abnormal loads do not tend to follow the Forth valley passage; they tend to go via Stirling. To give you an idea of the usage of the Forth road bridge for such loads, the heaviest load that we have had recently was one of 140 tonnes, which was in 2013. Therefore, the impact on the heavy haulage industry is limited. However, the heavy haulage industry can apply to move loads and, if necessary, the bridge can be analysed to check whether it can accommodate them.

David Stewart: Just to be clear, is the limit still 150 tonnes?

Wayne Hindshaw: It is 150 tonnes at the moment.

Derek Mackay: Mr Stewart, are you satisfied with the answer on why, after opening to more than 90 per cent of traffic at the end of December,

there was a period during which we could not allow HGVs over?

David Stewart: It was useful to get clarification on that. You will appreciate that we were told that there was not going to be a restriction and then we suddenly found that there was.

Derek Mackay: I will expand further and put the point differently. The well-informed assumption was that the crack related to a pin that was not rotating in one part of the structure. When we identified that two further pins were not rotating, we wanted to ensure that the same precautionary works were carried out at those locations so that we were satisfied that there would be no further stress on the bridge. That is the reason for the difference. We have concluded all those works and we have strengthened the bridge so that we are satisfied that none of the elements will be overstressed. All of that was informed by the new technology on the bridge. Is that more helpful?

David Stewart: Thank you.

I have one final question on the weight issue. Obviously, we have had representations from the haulage industry and we welcome the fact that there are no restrictions on HGVs. Are there any restrictions on the number of HGVs going over at one time? The engineers have explained to us that that causes difficulties.

Derek Mackay: No, there are no restrictions of that nature. There were such restrictions during the temporary pilot period when I was phasing in the reintroduction of HGVs. That was for the reasons that I have given to do with acceptable parameters of stress levels on the bridge until the works were complete. However, there is now no such restriction and no requirement for any such restriction.

David Stewart: Will you clarify exactly where the phase 1 repairs—the splint repairs—have been installed?

Derek Mackay: The phase 1 splint repairs started on the broken member and were then carried out on the other members. As you will recall from the technical briefing, the splint essentially shoes in the crack and strengthens it. That was done first at the north-east tower and then at the other towers.

David Stewart: Was the phase 2 installation done at four locations?

Derek Mackay: To begin with, phase 2 was at the four main span locations, and there are a further four.

David Stewart: So phase 2 was at four locations, and that has all been completed.

Roy Brannen: The work on the four internal parts of the towers on the suspended span section

has been done as phase 2. The work on the four external parts needs to be completed as well. However, that is not critical for traffic running on the bridge.

David Stewart: Just on a technical point—perhaps this is for Mr Brannen rather than the minister—is it accurate to say that, as we have been told, the pin in the north-west corner of the main span is operating correctly?

Roy Brannen: That is probably a question for Wayne Hindshaw. However, we can tell through the strain gauges that the pin is showing no signs of the stress that the other pins were showing, so, yes, that particular element is operating sufficiently well for no further work to be required on it.

David Stewart: Thank you—that is all my questions.

10:45

The Convener: We are keen to get as much factual information as possible on the record to assist with our inquiry, minister, which is why David Stewart was taking a bit of time to try to establish some of the facts. There are a few additional points that I would like to get on the record—perhaps from the officials rather than from you.

Can you provide the committee with information on the additional problems with seized pins that were found and announced on 5 February and which further delayed the opening of the bridge to heavy goods vehicles beyond mid-February? When were they found, where were they located and what repairs to them have been carried out?

Derek Mackay: I preface the answer with the good news that, having identified that issue and undertaken the works, we know that the pins are now not the issue that they were at that point. We were undertaking the works anyway. I do not want you to have the impression that it is an on-going problem, because the repairs that have been undertaken have addressed that issue to the point where we are satisfied that we can allow all vehicles back across the bridge.

Wayne Hindshaw: Before Christmas, we started installing structural monitoring equipment, data acquisition units, fibre optic cabling and electrical feeds. That was all in place at the north-east truss end link before load testing took place and informed us about the stresses and strains that were going on. We then decided that we would install that equipment at other locations, particularly in the main span, where we considered that, as we had one seized pin, there was a possibility that we could have problems elsewhere.

At that time, we had done further analysis that proved that whether or not the pins were seized

was not an issue for the side spans. The splint-strengthened members could take the induced bending stress and, technically, could live with it, although that was not how they were originally designed to behave.

As a result, there was a lot of pressure to put the data analysis equipment—basically, the box computers—in the towers at the south-east and the south-west. We were able to rig the data acquisition unit in the north-east tower to monitor what was happening at the north-west link. The strain gauges and movement graphs showed that the pin was rotating and was not generating the stress in that link.

To answer the specific question, we got the data acquisition unit on the south-east tower in early January—the second weekend in. In layman's language, we jury-rigged the unit to measure the south-west as well, before we got the acquisition unit from Germany that gave us the information that we would rather have not had. Both the pins on the main span, at the south-west and the south-east link, were displaying high levels of friction, if not higher levels of friction than that which had been displaced at the north-east pin. At the time, we realised that we were going to have to implement phase 2 repairs to those links.

The Convener: That is helpful.

The bridge reopened fully to HGVs on 20 February, which is earlier than the anticipated date of mid-March that had previously been advised, which was announced on 5 February. What were the factors that allowed for an earlier opening?

Derek Mackay: There were severe weather impacts, with one storm after another. Incidentally, those weather impacts led to restrictions on other bridges. The weather impacted on the repairs programme—on the works—because we cannot have staff working on the bridge in dangerous conditions. When it is particularly windy, staff may have to come off the bridge in a safe fashion.

However, staff teams were programmed to be on the bridge as much as possible to carry out the works in those quite challenging circumstances. It was a 24/7 operation to get the bridge repaired, and the programme was accelerated as much as possible.

As it happens, after we set the new timescale, the weather improved. I said publicly at the press conference and in the press release that contingency time was built in, although we would not have wanted to identify any new faults. The better, more favourable weather impacted positively on the programme after the completion date was amended to mid-March.

There was 24/7 working and real dedication to getting the job done as quickly as possible with

confidence. There were also different ways of working. Amey was putting pressure on the suppliers to get supplies as quickly as possible, and work was carried out in the workshops rather than on site at the bridge in order to accelerate the programme. The programme was reordered with some of that in mind in order to accelerate everything. We were all pleasantly surprised that the repair work came in ahead of the publicly stated timescale of mid-March.

To recap, there were three key elements. There was dedication—staff did not down tools other than because of the weather; the weather was more favourable; and there was pressure on suppliers and work going on in workshops. That degree of re-engineering, as it has been described, allowed for a far more effective execution of the repair work.

The Convener: That is helpful.

I will move on to the costs of permanently repairing the bridge. When Transport Scotland officials appeared before the committee on 20 January, they offered to provide additional information on the cost of the Forth road bridge's structural monitoring system, the cost of the phase 2 repairs and the cost of replacing all the linkages. We have received that information, and the figure for permanently repairing the bridge is approximately £19.7 million. I want to give you the opportunity to place on record the various phases of the proposed repair work and the associated costs for each of those.

Derek Mackay: I am happy to do that, but once again I add the caveat that not all the costs are settled and there may be other variables in play. I can give you the figure that I have at present, which remains the same. I will set out the detail as you have requested.

My understanding is that, for the phase 1 splint repairs, the cost is up to £3 million. For the phase 2 repairs, the cost is £2.65 million for the four that I have mentioned, with a further four—which David Stewart asked about—at a further cost of £2.65 million. The phase 3 works are still to be worked up and fully designed before implementation, so I will give more detail later. The cost of the four main spans is £5.7 million, and the cost of the side-spans work is of a similar order. That takes us—you are right, convener—to the figure of £19.7 million. The cost of the strain gauge and the structural health monitoring system is around £1 million to £1.5 million. Those are the figures that we have shared, but I attach the caveat that they are not settled.

The Convener: Thank you—that anticipates my next question. It is clear that you do not consider that to be the final definitive cost of the repair work. Do you think that it could be less—or more?

Derek Mackay: I am hoping that the cost will be in that region, but you are right: it is not settled.

The Convener: Thank you. I will leave it at that and pass over to Clare Adamson.

Clare Adamson: As part of the spending review in 2011, how did Transport Scotland assess the indicative capital plan prepared by FETA and determine the level of capital grant that was to be provided for 2012-13 to 2014-15?

Derek Mackay: There would have been a two-way exchange between FETA and Transport Scotland in view of the UK spending review, which had a significant impact on the Scottish Government's budget. I assure members that it would have been expressed to FETA at the time that there should be a degree of prioritisation and that committed projects would be seen through. Anything that was critical for the health of the bridge would have been funded, and reprioritisation would have been undertaken in that light. The Scottish Government, through Transport Scotland, would have expected a tiered approach, beginning with actions that did not diminish the structural integrity of the bridge and including the work that was necessary to maintain the bridge's structural integrity and its on-going maintenance and operation. The decision would therefore have been taken in that light.

There were financial pressures, but everyone in public life faces those. On-going careful management of the bridge would have been expected and there would have been on-going dialogue between Transport Scotland and FETA.

I have seen the evidence—I think that you have seen it, too—and I think we all appreciate that, if the need for any critical repairs had been identified, they would have been funded.

Clare Adamson: We were told in evidence that revenue from the tolls was critical to the capital programme for the bridge, but FETA accumulated quite high reserves over the years when the tolls were in operation. At one point, the reserves sat at £18.6 million. What do you think about those levels of reserves? How close are they to the budgets for bridges in Scotland?

Derek Mackay: If I may, I will relate that back to the capital plan. As members will be aware from their knowledge of local government and other parts of the public sector, capital plans can list a number of things and they are not always completed in one year. They can be long term and they can relate to other things.

The capital plan for the Forth road bridge through FETA was not all about the structural maintenance of the bridge or critical repairs. To give you an idea of the nature of the capital plan, I reference the £1.4 million for tower painting, the

£40,000 for landscaping works and the £70,000 for vehicle replacement. The plan appears to have come in isolation from, initially, the indicative capital plan from the spending review process, and then the resources that were available. I say that without criticism.

You are right about the toll income for FETA, which was £11.99 million in 2006-07, £10.299 million in 2007-08 and £10.1 million in 2008-09. Substantial surpluses were held in reserve, and those moneys would have served both revenue and capital. I am not here to criticise FETA's spending decisions, but to put the matter in context, I note that it replaced the toll collection equipment in 2005-06 at a cost of £8.5 million. On the abolition of tolls in 2008, the cost of remodelling the plaza area to allow free-flowing traffic was £2 million. That should help to inform your understanding of the capital plan.

I gave you figures for the toll income ranging from £12 million to £10 million. The figure for Government grant for 2012-13, for example, was £11.38 million—£5.1 million in revenue and £6.28 million in capital. There was also use of FETA reserves. I would challenge any suggestion that the bridge was underfunded.

Clare Adamson: Thank you for that clarification.

On the decisions that were taken, the indicative capital plan had been in place for a number of years, with the truss end link replacement being part of that. What difference did the decision to build the Forth crossing have on decisions about taking another look at the capital plan?

Derek Mackay: My understanding from FETA is that it considered the prospect of the Forth replacement crossing and would have reordered and reprofiled works as a result, considering what was required earlier and what could be deferred until later in view of potential disruption—that is always an issue with bridge maintenance and potential bridge closures. It would have considered that along with the available resources and what could take place once the new Queensferry crossing had been built. I think that FETA understood that and reordered some of its work.

Incidentally, the reprioritisation of FETA's capital programme was a matter for that independent organisation. The dialogue between the Scottish Government, through Transport Scotland, and FETA was around finance, with a clear understanding that FETA should do nothing that would undermine the structural integrity of the bridge and should approach the Government if any critical repairs were required. It did that, and I can give you an example. In 2012, there was a request for more resources for cable band bolts.

That request was accepted by Transport Scotland and I think around £2 million was paid out.

11:00

I have heard suggestions that some in FETA were frightened to ask the Scottish Government for money, because the answer would have been no. I have to say that that is not normal in Scottish public life; folk are not normally frightened to ask for more resources, if they are required. The instance that I have highlighted is a clear example—a £2 million example—of identified works of a more critical nature that were not already part of the Scottish Government's programme but which were brought to the Government and then delivered with the Government's agreement. If we were asked—and the case was made—the request was granted. The committee should be aware of that, because it contradicts some of the unsubstantiated evidence that you have been presented with.

Roy Brannen: A FETA board paper dated 20 February 2009 says:

“the announcement of a firm commitment by the Scottish Government to a definite programme for the construction of the Forth Replacement Crossing has allowed for a review of the Authority's maintenance programme to be carried out.”

One of the schemes that were reviewed at the time related to the main expansion joints on the bridge. Barry Colford and the team had proposed a very innovative and creative scheme to replace those joints, which would have required temporary ramps to take traffic up above the bridge deck and then down again. That would have allowed traffic to continue to use the bridge, but the ramps were valued at £6 million. When there was certainty with the new bridge, Barry Colford looked at the matter again and proposed another innovative and creative scheme for managing the joints, and that scheme is still in place today. A saving was therefore made to the public purse by taking a close look at what could be deferred as a result of guarantees about and the programming of the new replacement crossing.

Clare Adamson: What is the value of the replacement crossing project?

Derek Mackay: If by “value” you mean the estimated cost, I think that it is an eye-watering but well worthwhile £1.4 billion.

Mike Baxter (Scottish Government): The current range for the total is £1.325 billion to £1.35 billion.

Clare Adamson: I would call that a considerable investment in infrastructure.

Derek Mackay: Some people have asked me what the contingency is for the Forth road bridge

in the future. If well maintained, the bridge could continue to our satisfaction, but we will have a rather substantial contingency right next door to it in the shape of the Queensferry crossing. The bridges will act as contingencies for each other, and that approach will give us more flexibility and options if any works are required on either bridge.

Clare Adamson: I should put it on the record, convener, that all the evidence from the experts suggests that getting the existing bridge back up and running within the timescales has been an astounding achievement that is to be commended.

The Convener: You speak on behalf of the whole committee when you say that.

We have received expert evidence from a range of witnesses, including the former chief bridgemaster Barry Colford, who told the committee:

“As I said, FETA was in a position whereby we had the governance but not the funding ... We prepared the capital programme, the board approved the capital programme or plan and then we had to ensure that we got the money for that capital programme or plan. That involved negotiation and discussion with Transport Scotland.”—[*Official Report, Infrastructure and Capital Investment Committee, 27 January 2016; c 17-18.*]

You have given us a bit of insight into the process of negotiation and discussion, but do you want to say anything else about that?

Derek Mackay: I will simply complete what Barry Colford said, because he also pointed out that he enjoyed a good relationship with the Scottish Government through Transport Scotland. That was a mature relationship in which issues were identified and then there was dialogue, with a technical and financial understanding, to address any issues that needed to be addressed. I have given the committee one example in which, even after the financial agreement was reached, further funds were allowed—in that case, for cable band bolts in 2012. The relationship and the process were both important.

Even if FETA had continued, it would have had to rely on toll income. I have already told the committee about the Scottish Government grant income, the use of surpluses and the funding provided by the tolls. Even in the days pre-toll abolition, FETA could spend only what it could raise.

I simply make the point that it was never the case that capital plans could always be delivered immediately in full; that was a matter of financial availability. The dialogue between FETA and the Scottish Government ensured that we enjoyed a mature relationship. Prioritisation was a matter for FETA, independent of the Scottish Government. However, anything that would have been critical

certainly would have been funded, and there was a strong awareness of that.

The Convener: You said that capital spending was on a needs-prioritised basis and you have just repeated your view that, if any critical repairs had been needed, they would have been funded. However, surely the point about prioritisation of projects is that FETA's prioritisation happened only after the budget had been confirmed in 2011.

Derek Mackay: The indicative programme covered a number of matters. I gave examples of what would go in an indicative capital programme, including painting and other aspects. Within that, FETA would have prioritised its works on the advice of its experts and the bridgemaster. There was the understanding that all actions would be undertaken in a way that did not affect negatively the bridge's structural integrity.

The Government's expectation during the spending review and beyond was that there would be a tiered approach. The capital programme would be worked out on the basis of what was required to protect and maintain the bridge's structural integrity. Other elements—things that would be nice to do or good additions—were clearly not priorities.

The Convener: My point is that the reprioritisation of projects in the capital programme happened only after the budget was confirmed in 2011. Is that the case?

Derek Mackay: Yes, but the prioritisation was in the light of the spending review. There was the indicative capital plan and then financial dialogue that led to what FETA was able to proceed with. It was—rightly—a matter for FETA to prioritise.

The Convener: The question that the public are interested in is whether, if the budget had not been reprofiled—to use that term—in the way that it had been, the larger piece of work to replace the truss end links could have taken place.

Derek Mackay: We are conflating two things: the specific decision on that work and, separate from that, how a capital plan relates to the available resource. I see that Mike Baxter is desperate to come in.

Mike Baxter: Another point is about timing. In 2011-12, the brakes were coming on in terms of available capital. At that time, Transport Scotland used flexibility to protect FETA's capital spending. It is a matter of record from the annual accounts that £1.4 million was advanced into 2010-11 to support FETA's programme and £3.2 million was advanced into 2011-12. In effect, that gave FETA the benefit of increasing the reserves that were available for spending in future years.

The Convener: When we took evidence, we heard that in the capital programme there was a

piece of work to replace the truss end links at an estimated cost of £10 million to £15 million. Are you saying that the money was there to do that?

Mike Baxter: No, that is not what I am saying.

Derek Mackay: I refer you to the FETA review of capital projects of 16 December 2011. Table 2 ranked the priority of the truss end links scheme as number 5 out of 13 reported schemes, and it was not noted as being safety critical. Paragraph 3.9 said:

“given the cost and difficulty in replacing these elements and the potential disruption to bridge users, further examination of the probability of certain combinations of load occurring and further structural analysis has been carried out ... As a result of this work there is now the potential to upgrade the existing links rather than carry out a full replacement.”

The matter is for FETA to explain and it is right that you are probing it. FETA began with the view that it should look at the whole truss end links assembly—the whole section. There were concerns about the truss end, but not about the part where the unforeseen fault occurred. FETA was more concerned about the bracket at the top. People say that you get the wrong end of the stick; in this case, some people got the wrong end of the truss. The pressure was at the weld at the top of the bracket. The concern was about that, rather than the unforeseen fault that occurred at the bottom.

As I understand it, there was an early concept of replacing the whole truss end assembly. For the reasons that I have given, FETA concluded that it could rescope the works so that there might be less disruption. That is what FETA progressed with—it rescope the works and addressed where the problem was. That stayed in the capital programme.

We have to get this right: what FETA did not proceed with was not a commission to do all the detailed works, because there was no design to replace the whole truss end assembly. All that it did was tender for a consultant to look at the potential of that piece of work. That is all that it tendered for, and that is what it did not proceed with. The truss end link work at the top, not the bottom, stayed in the capital programme, with a lesser priority. Incidentally, that is what Amey inherited following the pilot work in May last year, and that is what it was proceeding with. My officials are agreeing that that is accurate.

Roy Brannen: In 2008, the indicative capital plan identified the cost of truss end link work at £500,000 in 2010 and 2011. In the indicative capital plan in February 2011, the figures moved to £1.5 million in 2013-14 and £1.5 million in 2014-15. I cannot find an indicative capital plan that shows that £10 million to £15 million was in the forward programme. The indicative capital plan

from February 2011 showed £1.5 million in 2013-14 and £1.5 million in 2014-15.

The Convener: In evidence, we heard that the replacement of the truss end links would have cost in the region of £10 million to £15 million.

Roy Brannen: That is correct.

The Convener: We had an extensive discussion about that.

Roy Brannen: That brings us back to the point that a costed scheme was not sitting there. A range of estimates was probably put in the capital plan and considered more generally when the truss end links were talked about.

The Convener: Dave Stewart is anxious to come in.

David Stewart: Minister, you will recall from the evidence that I put a question to representatives of the former FETA about advertising for consultants. As you know, that is normal. As I am sure that your officials will testify, in normal events the engineering consultant goes away to prepare a report and comes back with an action plan for the work that will be carried out.

I could be wrong but, in my experience, it is unusual to advertise for consultants then pull the advert. FETA's advert went out, but then the process was ceased. We do not know who the consultants would have been or what they would have said.

In one sense, we are looking into our crystal ball to predict what a consultant would have recommended, because they would have gone away and done detailed works on the bridge and then come back to say to FETA, "This is what I want to carry out, and this will be the budget range." As the convener said, an estimate of £10 million to £15 million was given, but the advert was pulled. That is factual, is it not? The advert went out for consultants—

Derek Mackay: Yes—FETA made that decision. That is correct.

David Stewart: The key question is: why was the advert pulled?

Derek Mackay: I have given you the explanation that FETA understood that the concern with the truss end link related to the top of the member, rather than to the bottom. It was suspected that there was a problem with overstressing at the bracket and the weld. FETA looked at that, and we are speculating on what it decided. It had a cost estimate with a broad range of between £10 million and £15 million for replacing the links, but it was just a cost estimate. There was no design, no work ready to go and no comprehensive capital plan design function ready to go.

FETA's submission refers to "disruption to bridge users", rescoping the scheme, cost and affordability, and all the other factors. It could maintain the bridge's structure and address the area of concern by doing a different piece of work, which is what it proceeded to do. It is clear from FETA's actions that even that was not top priority, because it stayed in the capital programme that Amey inherited and is undertaking. The rescoping of the work was a matter for FETA.

If FETA had wanted to proceed with appointing consultants—as you have helpfully described, Mr Stewart—it could have done so; the resources were there to do that, so it could have proceeded. We are speculating, but a consultant might have come along and said, "Why are you proposing to replace the whole truss end assembly when the problem that you have identified is in one part?" Of course, it turned out that that was separate from where the fault actually occurred.

I do not know whether that was more helpful.

11:15

David Stewart: You will recall that I asked this very question of the previous bridgemaster. The basic point that he came back with was that he had the governance but not the capital. It was suggested that FETA went to Transport Scotland and that the budget to go ahead was not given the green light.

Derek Mackay: The budget for what?

David Stewart: The budget to employ consultants, who could have looked at the issue in more detail.

Derek Mackay: That is not correct. The decision to proceed—or not to proceed—with tendering for consultants for the work was a matter for FETA. It is not the case that the Scottish Government said that FETA should not proceed with that appointment.

David Stewart: Do you agree that FETA had the governance but not the capital? It was not the master of its own destiny.

Derek Mackay: As I have said, the Scottish Government, through Transport Scotland, had dialogue with FETA about the resources that would be available. I repeat that, if a piece of work had been determined to be critical, it would have been funded. I gave an example of how that would have been the case and of how the capital programme would generally have been delivered. I add that the capital programme that was devised by FETA and inherited by the Scottish Government is being delivered.

Barry Colford said that the repair was unforeseen and unforeseeable. I do not think that

we should lose sight of that. He did not anticipate the fault occurring; he was not proposing to fix it because it had not been identified at that point.

David Stewart: I go back to the point that we do not know what the consultants would have come up with, because they were not appointed. I am interested in the decision-making process for that. Did Transport Scotland have any role in that? FETA had advertised for the consultants, so why was there a late change? Was there a unanimous decision of the FETA board to go ahead and advertise? We were told that there was.

Roy Brannen: Yes.

David Stewart: So it was.

Roy Brannen: The value of the consultancy tender was £150,000 to £500,000, which FETA could have funded from its own funds. If it had wished to proceed with that consultancy, it could have done so. Transport Scotland was not involved in that piece of consultancy work being withdrawn.

David Stewart: I am just trying to be clear in my mind that I have got this correct. Am I correct in saying that it was a unanimous decision by FETA to go ahead and advertise for the consultants?

Derek Mackay: Convener, David Stewart is asking us whether a vote at a board at which we did not have a vote was unanimous—

David Stewart: Through you, convener—

Derek Mackay: Is that not a question for FETA?

The Convener: Excuse me—I am chairing this meeting. If Mr Stewart wants to ask a question, he is entitled to ask it. You can answer it in any way you see fit.

Derek Mackay: I am answering by saying that you can ask FETA whether a vote at a FETA meeting was unanimous.

David Stewart: Thank you, minister. In fairness, you have been quite good at quoting FETA minutes back to me. I was merely asking whether you were aware of the position. The answer to the question is, “Yes—it was unanimous.” We have that in evidence that is in front of us.

There was a unanimous decision to go ahead and advertise. We do not know what the consultants would have come up with. The consultants’ report might well have led to further works—we do not know about that. Are you saying that Transport Scotland had no role in FETA not proceeding with the work of the consultants?

Derek Mackay: I have said repeatedly that FETA was an independent organisation. If it had wanted to proceed with the appointment of consultants, that would have been a matter for it.

David Stewart: Did Transport Scotland have any role through emails, telephone conversations or memos in suggesting to FETA that it should not proceed because the capital programme funding—the £10 million to £15 million—was not going to be available?

Derek Mackay: Is that not proceeding with the tendering for and appointment of consultants?

David Stewart: Yes. Is there any evidence?

Wayne Hindshaw: I have reviewed the papers and I find no evidence of my former colleagues interfering in what was a matter for FETA. As Roy Brannen said, FETA could have afforded to go ahead with the consultancy and could have got the answer to the question that I think that we would all like to have seen.

Depending on the value of the works going out, the bridgemaster had his own fiscal limits for works that he could place with consultants. He followed that and carried on doing work with Fairhurst and AECOM thereafter. All that I can tell you is that, in so far as the evidence that I have seen and reviewed goes, there is no evidence that I or my former colleagues interfered with or influenced FETA’s decision making on the matter.

The matter was for FETA alone. It could have taken forward the consultancy contract or pursued the work in another manner, which is what it did with Fairhurst on a slightly smaller scale.

It should not be presumed that a more extensive and less cost-effective scheme would have been pursued. A consultant probably would have looked at providing best value for money as part of any optioneering. The design that came out of the workshop was conceptual and was not finalised. What has happened since has been evidenced by FETA’s downsizing of the scheme. It is oversimplifying the case to consider that a full replacement would have taken place.

The last supplementary report from Fairhurst in 2014 focused entirely on the tower brackets and welds and not on the truss end link post and pin joints, which were noted as not being overstressed. In the evolution of the process over many reports, Fairhurst arrived at a position in providing advice to the FETA board on the work that needed to be done.

The Convener: It will be interesting to compare and contrast what you have just said with what Mr Colford said in evidence.

Derek Mackay: A deeper understanding is needed. Some members need to look at the detail of the piece of work that is being talked about and the particular contractual obligation involved.

Revenue and capital budgets are important as well. I described how the overall settlement was

reached and how there was an expectation that FETA would take a tiered approach to its capital programme. To take an example, I imagine that funding to appoint consultants would have come from revenue rather than capital. Representatives of the former FETA would be able to explain that from the records at the time.

Roy Brannen: I have checked through FETA's records and the first date that I can find for Barry Colford reporting to the board that there was a reduced scheme is in December 2011. I cannot find a record of him reporting to the board that the tender for the consultancy had been withdrawn. It might be there, as we might not have a complete set of records, but our present finding is that December 2011 was the first date when the refocused scheme was brought to the board.

The Convener: The committee has attempted to obtain from Transport Scotland and from former FETA officials any documentation that might show the process of dialogue between the two bodies about FETA's indicative capital plan and the allocation of funding by the Scottish Government following the 2011 spending review. Minister, can you say whether such documentation exists and, if so, whether it is the intention to provide it to the committee?

Derek Mackay: We can provide more information, and I will do that this afternoon.

The Convener: Thank you.

Alex Johnstone: Who is responsible now for preparing the capital plan that sets out necessary future work on the bridge?

Derek Mackay: That is a matter between the operating company and Transport Scotland. The process identifies works that are required, the available resources and the priorities—what will ensure the on-going operation of the bridge to our satisfaction and avoid undermining its structural integrity. That requires on-going dialogue.

I ask Mike Baxter to explain the mechanism a bit more.

Mike Baxter: With the abolition of FETA in 2015-16, we in effect inherited a capital plan, and the draft budget that is before Parliament for 2016-17 reflects its content. There is £9.1 million in capital—

Alex Johnstone: Did you largely adopt FETA's capital plan when you inherited it?

Mike Baxter: Yes.

Alex Johnstone: Having been responsible for the plan for more than half a year, have you made any changes to it?

Mike Baxter: The overall quantum of the plan has not changed but, as with any capital plan,

there is a constant reassessment of priority for the maintenance of any asset. If we leave aside the issues that have been the subject of spend since December, Amey goes through a constant review process in conjunction with colleagues in Transport Scotland.

The interface with the budget process is about ensuring that the on-going review of what makes up the plan, with an understanding of the priorities, is fed through into the spending review process. That is an on-going process that involves all our business in Transport Scotland and not just this matter.

Alex Johnstone: I am interested in how you prioritise issues within the process.

Wayne Hindshaw: I could help on that one. The 2011 to 2016 FETA capital programme was reviewed and adopted during the six-month mobilisation. It was a contract obligation of Amey, our new provider, and FETA was part of the mobilisation process. During that period, the programme was reviewed in detail and there were some slight changes and additions to it. You must understand that the new Forth bridges unit now includes a short length of trunk road motorway that was previously part of another unit. Therefore, as part of our plan, we have some pavement work, safety barrier upgrades and all the other things that go with maintaining a section of motorway. However, the bulk of the structural work for the Forth road bridge remains as programmed and prioritised by FETA.

On how that programme came about, FETA inspected and ranked the defects in accordance with the Forth road bridge engineering manual, which was originally written by the designers but has been developed over a number of years to reflect best practice. The ranking system in the manual is similar to the one that we use in national standards across the rest of the trunk road network. It ranks defects according to ratings, with safety-critical ones being ranked 4 or 5, and less critical ones being ranked 3, 2 and 1 on the FETA system, and 3, 2 and 1 on the "Design Manual for Roads and Bridges" system for national standards—the systems align quite closely. That will advise you with regard to the different workstreams that you are taking forward, because not everything will fall into a structural ranking—you might be doing some work on a building as well, and that must be considered. All that has to sit within a programme.

Above that, we have introduced as part of our system an arrangement that we have put in place for the rest of the trunk road network, including the Kessock bridge, which Mr Stewart has an interest in, and the Erskine bridge. It involves a value management tool that flows out of work that has been done by the London Bridges Engineering

Group and was adopted and developed by the Highways Agency before being adopted and revised by us for use in Scotland some years ago. I will not describe it as a sausage machine, where you pour everything into the top, turn the handle and force it out the other end. Instead, I will say that it is more like a risk management tool that enables us to take on economic and other sensitivities that might influence where things sit in our programmes that are not simply related to structural safety or structural integrity. As part of that process, we come up with our own indicative capital programmes. Under the Forth bridges unit contract, that function will fall to Amey, but it will be closely scrutinised by my staff.

Alex Johnstone: At that critical point, is the level of capital grant for repairs determined by the needs of the capital plan, or are the works determined by the level of funding that is available?

Derek Mackay: It is fair to say that it is a two-way process, but there is a principle that what you are committing to financially must not undermine the structural integrity of the bridge. It could be said that, in 2016-17, although the Government is hardly flush with cash, there is an increase for the Forth road bridge. The budget that we will vote on for 2016-17 includes a £5.1 million revenue budget and a £9 million capital maintenance budget, which is an increase from £4 million last year. That is an example of the fact that the funding reflects not normal trends and available resource but what is necessary, as Wayne Hindshaw has described. That is an example of budget impact.

There has been more capital spend on the bridge than was anticipated, as a result of the closure. You could argue that the £1.5 million for the structural monitoring equipment is spend on the bridge, in addition to the already-approved capital programme. In no sense will the works that we have undertaken as a consequence of the closure impact on the capital plan. That is not compromised. This is additional resource.

11:30

Mike Baxter: I will add a couple of points. How the budget for the Forth bridge is calculated is no different from how the budget for any other part of Transport Scotland is calculated. We have a long-term financial plan that is developed using a bottom-up approach. The needs are identified and then aggregated in an overall financial plan. As has been described, there is then a discussion on relative priorities and what needs to go ahead using the available resource. It is built up from a base. We do not simply say, "Here's an amount of money—what can you do with it?"

Because of the nature of asset management and capital planning generally, we do not tend to have flat or straight lines of spend on assets. The spend depends on the maintenance regime or programme and it can fluctuate quite a bit. That is all part of the financial planning process that we apply in Transport Scotland generally.

Alex Johnstone: Is it the case that, if something is near the top of the list of priorities, it has an impact on capital funding decisions whereas, if something is low on the list, it is less likely to have an impact on those decisions?

Mike Baxter: Yes, that is fair.

Alex Johnstone: So, as the priority of individual projects is determined, their priority in budgeting is the same. What I am trying to say is that not all things are treated equally.

Mike Baxter: No. Wayne Hindshaw might add to this, but what I have tried to say is that, as part of an asset management approach, we do not look at everything in the same light. We have a ranking and we take a risk-based approach to what we need to spend our money on. That is done as a matter of course. Regardless of whether we had £5 million, £10 million, £15 million or £20 million, we would still look at the priority in terms of delivering value for money and spending on the right things.

Wayne Hindshaw: In a sense, the prioritised indicative capital programmes that we have for all our operating companies and for the Forth bridges unit have utopian budget requirements, because they often look many years ahead. Richard Fish, one of the independent experts the committee heard from, said that, when he was managing the Tamar bridge, he lived in the real world as well as in the engineer's world. I do, too. I have close working relationships with Mike Baxter and my asset management colleagues to identify the high-priority schemes that need to be taken forward. That informs the level of budget that is to be allocated against a broad basket of other cross-disciplinary functions in Transport Scotland.

To answer your original question, it is, as the minister said, a two-way process. We do our best to satisfy the works priorities within the budget availability and we seek additional budget when it becomes available by having schemes that we can deliver rapidly. As the committee will know, Transport Scotland has a good record of having shovel-ready schemes and delivering them. That is part of our remit. Within that indicative capital programme, below the red line on the page that indicates what the budget will cover, you always need to keep a list of schemes ready to deliver should for some reason additional budget become available and we can deliver those priorities ahead of schedule.

Alex Johnstone: The economic impact of the closure has been considerable. Prior to December last year, when the Scottish Government assessed the priorities, did it take into account any broader economic impact that might result from significant closures such as the one that we are discussing?

Derek Mackay: To clarify, do you mean in relation to closure or before closure?

Alex Johnstone: I mean in more general terms, but the closure last year is an extremely good example that we can use. The broad economic impact was significant. Was that kind of cost taken into account by the Government in prioritising work on the bridge prior to the closure last year?

Derek Mackay: Of course it is. That is why we are building a £1.3 billion replacement crossing immediately beside the Forth road bridge while continuing to invest in that bridge. That is an example of how we consider economic impact in our capital spend. We are maintaining what we have got and we are building the replacement crossing because of its criticality to the transport network and the impact in the area. Of course economic consideration plays a part when our objective is to ensure the structural integrity of the bridge. We are doing that not just to ensure that the structure is there but to ensure that it is fit for purpose, and its purpose is to allow transport to go over it, so of course that is part of the mix. There has been political consideration of what our priorities are, and the Queensferry crossing is a capital priority.

The second part of your question was about the closure, which was necessary because safety is paramount. In recognition of the impact of that on the community, we enacted a very comprehensive travel action plan and ensured—by working with our partners—that more buses and trains, and more information, were provided, in addition to working towards the key priority of getting the bridge reopened as quickly as possible. We could have spent less money and taken more time. It would have been possible for us not to have commissioned people to put in the effort that they put in to get the bridge reopened as quickly as possible, but precisely because of the impact of the closure on the area, on people's lives, on businesses and on local communities, we made it our number 1 priority to reopen the bridge, with confidence, as quickly and safely as possible and we committed the resources that the committee has heard about to doing that.

Therefore, economic impact is a factor in capital spend decisions and how we respond.

Roy Brannen: I would like to make a point about the generality of how Transport Scotland looks after its assets. On structural road

maintenance schemes, there is an asset management hierarchy across the whole trunk road network, which takes into account socioeconomic impacts, safety and functionality. That is used in the value management process of prioritising structural road maintenance schemes on a yearly basis.

Alex Johnstone: The experience of December last year and the period since then has had a substantial impact, and it has been difficult for the Government to have to deal with that. Has it taught you anything? Has it changed the way in which you will react to similar incidents in future?

Derek Mackay: I think that it is fair to say that what happened was unforeseen. There are various incident and contingency plans in place in the event of disruption, but the nature of the fault that made the closure necessary was such that it was unforeseen. All the contingency plans were scaled up to meet the circumstance that we faced, whether that involved diversion routes, traffic management, bridge control, policing or engagement with local authorities.

There are always lessons that can be learned in how we deal with partners and the public, and I think that we acted very quickly. Before they were praised for getting the bridge open so quickly, Transport Scotland and all our stakeholders and partners were quite rightly praised for the travel action plan that was put in place. Within hours of the decision to close the bridge, preparations were made for people going back to work on the Monday. That involved bringing in extra rail rolling stock and buses, as well as a great deal of co-ordination. Therefore, another lesson that was learned was on the need for everyone to keep working in partnership in the event of a major incident such as the closure of the Forth bridge, which was critical to the country's transport system.

Smaller lessons were learned, such as on how to engineer works. I gave the example of how we were able to accelerate the repair works. Our operating companies have learned that it can be productive—because of the weather factor—to do more work in workshops rather than on site. A number of different lessons have been learned on how to operate in response to incidents.

From a political perspective, I think that being transparent has been the right thing to do—I am referring to the statement that I made to Parliament and the technical briefings that were offered to members, which many took the opportunity to attend. I think that that degree of transparency has been very healthy.

The response was to focus on getting the bridge fully reopened as quickly as possible, and that is what our energies were centred on.

Roy Brannen: I have been involved in leading transport resilience since the Glasgow airport attack, and we have dealt with many incidents across the network, whether they have involved pandemic flu, flooding, volcanic ash or landslides. We learn on every occasion, and we will do the same in relation to the closure of the Forth bridge. Wayne Hindshaw has already set in motion a series of debriefs with a range of individuals and stakeholders to make sure that we improve our resilience in the future.

The Convener: We have already touched on the estimated total cost of the repairs in phases 1 to 3 following the recent closure. It is clear that that cost, which stands at £19.7 million, is not insignificant. The enforced closure also caused significant and on-going travel and economic disruption, which we have talked about. With the benefit of hindsight, might it have been preferable for FETA to have taken forward its truss end link replacement proposals, as set out in the 2010 capital plan, in a planned and managed way, thus avoiding the high repair costs and unplanned disruption that, as you rightly said, could not have been foreseen? I accept that that was FETA's decision, not yours, but do you want to comment?

Derek Mackay: It is fair to say that we just do not know. I have been asked to speculate about the decision of another organisation and the factors that were in play at the time, but the fundamental point is that the fault was unforeseen and unforeseeable—there is a great deal of consensus around that.

It is hard to answer the what-if questions. What if FETA had proceeded with using consultants? What would a consultant have recommended? What resources would have been available at the time? When could the work have been profiled? Would the pins have seized up before that? There are so many unknowns that it would be unfair of me to make a judgment on whether FETA got it right.

I say again that this was an unforeseeable fault. We all have to bear in mind that the pressure point that existed was identified and was being pursued and repaired, but that was not what caused the fault and current closure—I said “current”, but it is a historical closure; there is now no closure on the Forth road bridge.

The Convener: We heard in evidence that the nature of the fault was unforeseen and unforeseeable, as you said. The committee understands that, but I think that the public wants to know whether the closure could have been avoided if FETA had taken the decision to replace the truss end links as part of the 2010 capital plan. Could the closure have been avoided?

Derek Mackay: We genuinely do not know, and FETA would not have known what its commission would have led to, in what timescale and with what conclusion. As Wayne Hindshaw helpfully said, a consultant who was worth their salary might have asked, “What’s the problem? What are you trying to fix?” and concluded that there was no need to replace the full truss end assembly for the whole section. They might have said that it would be more cost effective to identify the points that were being overstressed and fix them, which is ultimately what FETA embarked on doing, based on the information that it had at the time. We do not know what would have happened if FETA had proceeded differently.

There is a lot of political noise on the issue. I was asked in a radio interview whether full replacement of the whole assembly, had it gone ahead, would have captured the bit that was broken by chance. It might have done, but this is all ifs, and we do not know. If FETA had decided to replace the whole assembly, then by chance the bit that became the fault might have been replaced, but that would have happened by chance rather than because the element was identified. FETA did not embark on that programme anyway.

To be fair to FETA, what it did was proportionate, in view of the advice and assessments that it had at the time. It rescope'd its work in light of what I described. Does that help, convener?

The Convener: It all helps.

Roy Brannen: May I add to what the minister said? I think that Scott Lees said that, in an earlier evidence session, the convener asked all the witnesses whether FETA had made the right decision. Barry Colford and the team took the right decision when they took forward the reduced scheme and looked at the area that was actually impacted, because they just did not know about any other fault in the truss end link assembly.

Wayne Hindshaw: May I add to what Roy Brannen said? There seems to be an implication that FETA did nothing and withdrew. It did not; it carried on—

The Convener: That was not the implication in the committee’s questions.

Wayne Hindshaw: I want to make it clear to the committee that FETA carried on a close working relationship with a consultant and looked at different options. If the reports are read sequentially, you will see that there is a good technical trailing, which shows where things were leading to and where FETA arrived at in 2014.

The Convener: Have those reports been passed to the committee?

Wayne Hindshaw: Yes, they were part of the evidence pack that was submitted before we came—

The Convener: I just want to be clear, because further information will be forthcoming.

Wayne Hindshaw: You have those reports. I do not expect everyone to read the reports as bedtime reading, but a logical thought trail runs through them that says, “Here’s where we got to at a workshop and here’s where we got to in 2014.” We were asked by you. I thought that what was done was proportionate. As a former consulting engineer with over 21 years in the private sector—I worked for the original designer of the bridge—I thought that it was a proportionate way to take the matter forward.

11:45

Derek Mackay: Convener, your question was also about whether, if FETA had taken a certain decision to do a certain thing and see that through, there would have been cost and disruption. Yes, of course there would have been. In executing the works, there would also have been disruption and cost that would not have been fully quantified—

The Convener: My question was whether that work would have been done in a planned and managed way that could have minimised the disruption, with the work done at weekends, for example.

Derek Mackay: I am not an engineer, but I imagine that it would be hard to replace the full assembly without some disruption and significant cost. However, because the works were never fully designed, never fully costed and never put out to tender for the full assembly replacement, the honest answer is that I do not know. We are being as helpful as we can be, convener.

The Convener: Thank you. Once the Queensferry crossing has opened, later this year, the traffic on the Forth road bridge will reduce significantly. What works will then be carried out that have been delayed so as not to disrupt traffic across the bridge?

Derek Mackay: What works do you have the impression are being delayed?

The Convener: Well, the priority has been to reopen the bridge.

Derek Mackay: I am not sure how that relates to the Queensferry crossing. As far as I am aware, there has been no impact on the Queensferry crossing from the works on the Forth road bridge. The Queensferry crossing works are progressing as they were. As well as repairing the Forth road bridge, we have taken the opportunity to

accelerate other works rather than delay them. I am not sure why there is any perception of delay.

The Convener: In that case, we will move on.

Adam Ingram: I have some questions about the arrangements for inspection of the bridge. How is the contract to inspect the Forth road bridge managed and paid for? For example, is there a lump sum payment to carry out a predefined series of inspections? We are not quite clear about the current inspection regime.

Derek Mackay: I will say one thing about the inspection regime and will then ask Wayne Hindshaw to give you more detail.

The current inspection regime is very much what was inherited from FETA, and it is informed by the very construction of the Forth road bridge as well as learning over the years and international learning. The level of inspection was inherited, and the bridge manual is a live document—it is the on-going history of the bridge. The inspection regime was inherited and we know how the fault was identified on inspection—I am sure that that has been explained to you.

However, it is fair to say that our further understanding of the bridge and the new monitoring equipment will add to the inspection regime. It is even more robust with the new technology that we have on the bridge and our deeper understanding. That should give you confidence around the inspection regime. The fault occurred and was identified within weeks, and we moved ahead with the remedial work and repairs as well as with more forensic inspection.

It is important for the committee to know that we have taken the opportunity, during the bridge closure, to carry out a painstaking and thorough investigation of the bridge, and there are no new substantial defects or faults, although there are some small issues that have been picked up and addressed as a matter of course. We took the opportunity of the bridge closure to carry out that more comprehensive inspection in addition to the inspections that were already programmed.

Wayne Hindshaw can say a bit more about the payment regime between the operating company and the Government.

Wayne Hindshaw: Just to put it into context, the bridge inspections have continued under Amey using the same staff and procedures that were developed, tried and tested by FETA. Under the Transfer of Undertakings (Protection of Employment) Regulations arrangements, everyone went over. I understand that one of the inspectors has retired in the natural course of things but, apart from that, the staff are the same.

The Forth road bridge inspections are undertaken in accordance with the Forth road

bridge engineering manual, which I touched on earlier. The manual has been updated and developed over the years to reflect best practice. It has been described before, so I will not do so again. It is a live document and the process is kept under constant review to ensure that it aligns with best practice.

To put the committee in the picture, during the development of the Forth bridges unit contract, the people that developed the contract for us—a company that is now called CH2M but was called CH2M Hill, or Halcrow, which the committee may have heard of—engaged one of the country's foremost bridge specialists, Flint & Neill Ltd. Neil McFadyen, one of its senior staff, reviewed the Forth road bridge engineering manual to give us the confidence, as the Scottish Government—and as Transport Scotland, representing the Scottish Government—that what was in the manual reflected best practice. The committee will have heard of a number of high-level consultants, but Flint & Neill—for which one of your independent experts, John Evans, was the former senior partner—is recognised as a world leader in the area and has experience on a number of these types of bridges around the world. That is mainly the Severn bridge but also the West Gate bridge in Melbourne.

To put it simply, very few changes were made, but that process brought to the attention of my staff what needed to be done. I will not talk any more about the generalities of inspection manuals, but the very simple answer is that, in line with our other operating companies, those predefined inspections that are well specified, well defined and well laid down for the Forth bridges operating company are paid for through a series of monthly lump sums. Any additional or special inspections that arise out of that are paid for separately, usually at what we call professional service rates or, if we need to bring in an outside expert, at the costs associated with bringing in that outside expert.

If we find something during the inspections, we do not expect Amey to absorb those costs within that lump sum. If we need to go out and do weld testing or to bring in a company such as Strainstall or whatever to assist, as we did, that is paid for in addition. Part of our budget is set aside to do that. We tend always to have an on-going series of what I will call special investigations that arise out of the principal and general inspection programme to tackle issues that occur. I hope that that is helpful.

Adam Ingram: You mentioned that best practice is constantly evolving, and presumably standards reflect that. I think that somebody mentioned earlier that all over the world people will now be looking at pins in their suspension bridges.

How are all those developments, as they happen, incorporated in the inspection regime going forward?

Wayne Hindshaw: The manual is a live document, and there are also opportunities to introduce changes through the contract change mechanism. If anything substantial were to come forward that we felt needed to be introduced today or tomorrow, that would be done. However, as I have explained, as part of the development of the contract, a full review has taken place. In a couple of years' time, as part of the development of the next phase of the contract, the same process will be gone through.

Adam Ingram: So it is a periodic approach.

Wayne Hindshaw: It is, formally and contractually, but that is not strictly true. FETA, as a roads authority at the time, was responsible for setting its own inspection standards. Clearly, it reflected the best practice that was developed over the years by the Department for Transport for its long-span structures around Britain. FETA sat on a number of national, international and UK forums. I and my immediate colleagues below me in Transport Scotland sit on a number of UK forums to review, share, disseminate and collaborate on developments of best practice. FETA sat on those groups, and I know Barry Colford very well from that. Roy Brannen sat on the UK roads liaison group for a number of years; it is now Donald Morrison who does that.

I sit on the bridge owners forum, the UK bridges board and the Society of Chief Officers of Transportation in Scotland bridges group. I am a member of the International Association for Bridge and Structural Engineering, and part of my task is to review, absorb, determine and discuss with Roy Brannen and other senior managers things that arise in the industry that we need to take cognisance of and to build into our contracts. We also now sit on the long-span bridges group, a UK forum of which Barry Colford was a member, which includes the Severn, Humber, Tamar and Dartford crossings.

You must understand that Transport Scotland is the authority that oversees organisation for all structural standards and design approvals on all trunk roads in the whole of Scotland. Given that that is a key part of our work, a key part of my section's work is to keep up to date on what is going on in those UK organisations. It can be a bit of a Sisyphean task, pushing the stone up the hill all the time, but it is a key part of what we do. Individual engineers in my section have individual portfolios for which they are responsible and for which they are the point of contact, whether that is the bridge strike prevention group or the concrete bridge development group, which Dr Hazel McDonald sits on.

There has been recent on-going work on building information modelling, or BIM, which is a Department for Transport initiative to take us all forward, and you have seen the flowering results of that through some of Amey's beautiful schematics and computer-generated graphics. Another key area that we are working on is deterioration modelling. Another, after some tunnel collapses, is safety-critical fixings, and the key one that is being implemented this year is the new bridge inspector competency course, to train for future bridge inspections. We have a role at the heart of those organisations. That does not necessarily make us experts, but it means that we are better informed than most.

Derek Mackay: Could I add to that, with your indulgence, convener? All the expertise and understanding about the bridge was seamlessly transferred over from FETA to Amey. We have had that expertise in Government and in Transport Scotland and we also relied on Amey's international connections to enable us to execute the repairs as we have done. Amey is a big organisation and is part of a bigger organisation, so that resilience and shared understanding have helped. As far as I am concerned, we had some of the best people in the world informing our thinking on the repair and the modelling.

The committee can also rest assured that the understanding is documented. It is not just with individuals; it is there on record so that we can understand the behaviour—as it is described—of the bridge. Comparisons are made with bridges around the world, and we are not aware of any similar fault with the mechanism that could have alerted us to that happening on the Forth road bridge.

Wayne Hindshaw: It is a matter of interest that Barry Colford, in his latest venture, is working on a structure called the Walt Whitman bridge in America, which has a truss end link system. I am not aware that there are any problems with it. Truss end link systems are not common, because the systems vary according to the bridge type, but they are not unknown.

Derek Mackay: I hope that that was comprehensive enough for you, convener.

The Convener: I am not sure that we have finished yet.

Adam Ingram: I am reassured that Transport Scotland is on the ball, but we have heard throughout the inquiry about structural health monitoring and various bits of kit that can be used nowadays for on-going monitoring of the performance of elements of the bridge. If I heard you correctly, we have spent £1 million to £1.5 million on monitoring the eight pin joints. Is that correct?

Derek Mackay: Yes.

Wayne Hindshaw: Yes.

Adam Ingram: Is there any other information that you can provide on that? Do you intend to install any more equipment on the bridge, or is that sufficient?

12:00

Derek Mackay: We now have more technology on the bridge than ever before, and some of it is the latest technology, designed for the issues identified on the Forth road bridge. What has been installed includes sensors, strain gauges, tilt metres, temperature gauges, fibre-optic lines, electrical feeds and data-acquisition units to ensure that we have the best information. The stress limits on the bridge are being tested, and that testing informed the decisions on what traffic we could allow over the bridge.

There was modelling of what was happening on the bridge and then there was live load testing when we ran gritters over the bridge. So, we can do modelling and then live testing. Through the monitoring equipment and other indicators, we can see the traffic's impact on the behaviour of the bridge. Humans are quite important in the process, too, in terms of inspections. The process involves not only high technology but visual inspections and listening to noise. We will continue to use the range of different methods to inspect the bridge, but the increased technology on the bridge gives us a deeper understanding of its behaviour.

The new equipment has been helpful and has given us the confidence to assess what can be allowed over the bridge, which is now fully operational. We can know in good time what the stresses are on individual members. Metallurgists have suggested that the fault, or crack, was down to metal fatigue. The stress on the member can now be assessed by the new equipment, which is information that we did not have previously. The fault was unforeseeable, but we now know the history of what happened and have more technology. We have made precautionary repairs and have strengthened the bridge in the way that we would be expected to.

There are no plans for further equipment. Each piece of equipment is appropriate for the issue and circumstances. I recall an answer to a parliamentary question on the dehumidification system and the acoustic monitoring, which happened because of concern at the time about the cables. That shows that we respond to each issue as it occurs. Of course, we will try to predict what might happen, but I am not Mystic Meg: I do not have a crystal ball and I do not know what the unforeseen is. However, we will certainly do what we can to predict and prepare, and we have

contingencies in place—there has been substantial investment in that regard.

On the wider lessons learned and new technology, which Mr Ingram and Mr Johnstone are interested in, we can now reasonably consider what level of equipment to have on the Queensferry crossing in order to understand the behaviour of that bridge. It is helpful for us now to have established expertise for that, and we commit to using it for the Queensferry crossing.

Roy Brannen: Just to add to the minister's point about the Queensferry crossing, it will be the first bridge in Britain to have SHM built in from scratch. The bridge will be heavily instrumented and a new control room will be built into the offices to allow remote monitoring.

Wayne Hindshaw: I apologise if I am labouring the point, because the minister gave Mr Ingram a good answer to his question on what we will do in the future, but I have asked for a feasibility study to review, assess and give advice on future locations on the bridge where, depending on funding and what the structural health monitoring tells us, we can install strain gauges and tilt metres. The expansion joints and the viaduct movement joints might be included in future remote monitoring locations so that we can get an accurate record of what exactly they are doing during the day and at night.

We have quite a lot of structural health monitoring already on the bridge. As others have said, we have acoustic monitoring of the cables, dehumidification and geospatial sensors, which are monitored remotely from the University of Nottingham and which tell us that the bridge is moving 4.5m up and down and 7.5m laterally. That came as a surprise to some of us, but that is what it is doing and the plots are very interesting.

Barry Colford previously made a valuable point. Although he did not say that visual inspection and the ability to put a fingernail into a crack and get up close and personal remain our primary method of inspecting things, he said that we have to be careful with structural health monitoring. It is a very new thing and we do not want to end up with data overload whereby we have a great deal of information coming at us but no idea what to do with it. We will therefore be in learning mode for quite a while.

Adam Ingram: Right. That was a fairly comprehensive answer to my question. The minister, then, is no Donald Rumsfeld with his known unknowns and unknown unknowns and all the rest of it—no doubt he is relieved by that. I will pass now, convener.

The Convener: Thank you. Michael.

Mike MacKenzie: Oh, is it me?

The Convener: You are not under any obligation to ask questions if you would rather not.

Mike MacKenzie: Most people do not refer to me as Michael but as Mike, as per my name plate.

Before we leave this fascinating discussion, can I ask the minister whether any consideration was given to structural health monitoring for the truss end link or any other part of the bridge before the failure in December?

Derek Mackay: I am not aware of any discussion to that effect. The concerns were about other parts of the bridge, such as the cables, where we did the acoustic monitoring, as I have said. A problem was identified at the bracket and there was a programme of works for that. I am not aware of any previous discussion on installing the structural health monitoring mechanisms.

It should be borne in mind that some of the technology has been made to measure for the Forth road bridge in light of incidents, and that is appropriate.

Mike MacKenzie: Thank you. I think that we have covered that subject pretty exhaustively.

Mr Colford explained to the committee that, when he was the bridgemaster, he was a member of the International Cable Supported Bridge Operators Association and he was able to learn from good practice across the world. Is there any continuing arrangement whereby that good practice can be tapped into?

Derek Mackay: As Wayne Hindshaw described at length, we are still involved in the local, regional, national and international forums for intelligence on bridge structures. We are still getting that deep understanding.

Incidentally and for the sake of completeness, I should say that bridgemasters still talk to each other to share their expertise, which is also helpful.

Mike MacKenzie: During our inquiry, we heard that the Humber bridge's maintenance regime is based on a 60-year plan. There will be a reduction in the amount of traffic using the Forth road bridge when the new bridge opens, so what is its projected lifespan?

Derek Mackay: It is on-going. Strong maintenance of the bridge could see it continuing to be used for as long as we want. The advice that I have been given is that as long as we keep investing in and maintaining it and replacing components as required, the bridge can continue for whatever time we want. Previous estimates of lifespans have been between 50 and 70 years, but they are all estimates.

Mike MacKenzie: I will move on to a slightly different subject. During the inquiry, we heard a lot about the disruptive effect of the bridge closure.

Has there been any upside to the closure in terms of commuter behaviour or whatever?

Derek Mackay: We want to see modal shift from the car on to public transport. As transport minister, I particularly want to encourage that. During the closure, our travel plan saw a clear and welcome shift on to public transport. People went more to rail than to bus, even though there was a bus priority lane as well as a goods priority lane. There was certainly far more use of public transport, which was welcome. Extra rolling stock was provided to the area and staffing was enhanced at public transport points.

One of the advantages was the earlier train that was put on in the morning, and ScotRail has maintained that service because there has turned out to be on-going demand for it. That is a public transport benefit, which is welcome. The situation encouraged a lot of people to use public transport who perhaps were not using it before. If we want to achieve modal shift, people need to get out of their cars and on to public transport.

I appreciated the forbearance and patience of the public and businesses in the local area during the period of disruption. There were public transport benefits, such as the improved rail timetable and more people got used to using public transport.

We are undertaking an evaluation exercise—which I do not think will be ready in time for this committee to consider, but which in any event is not central to your inquiry—to come to an understanding of how people responded to disruption, how they got to work, the use of public transport and so on. I will be happy to share the results of that exercise if the committee is interested, but I can tell members that it shows a significant shift during the period and that there are on-going benefits.

Mike MacKenzie: That sounds interesting.

This will be my final question, convener. When we heard from the panel of independent experts, they lavished praise on the whole bridge team and everyone involved in the process for identifying the problem and undertaking remedial action very quickly indeed. I think that you yourself have had very hands-on involvement in the process. You have already touched on the initial decision, but can you describe for the committee your involvement as this story has unfolded and come to its happy conclusion?

Derek Mackay: It is fair to say that the experience of transport ministers during the winter is a very particular one. The situation, though unforeseen, was quite intense. When we looked back at the record, we found that there were more than 20 ministerial calls and engagements, some of which, of course, included cabinet secretaries,

the First Minister and the Deputy First Minister, who have lead responsibility for resilience. There were also a number of site visits, as well as very frequent reports to ensure that we were on top of the issue. I was left under no illusion that the priority was not only to ensure public safety but to get the bridge reopened as quickly as possible, and that is where we have directed all our energies.

We have also taken advantage of the Forth road bridge closure—and this is why I was thrown by the earlier question about delay—to support works to the Queensferry crossing that have, as a result, been able to take place with less disruption. We have also tried to do as many as possible of the works associated with the Forth road bridge, such as those relating to the carriageways and those that might have led to future disruption, during its closure and, indeed, while we were fixing it. I remember the repeated calls to let pedestrians and cyclists go across the bridge during the closure but, as much as we would have liked to have done that, we could not compromise public safety. After all, it was a live work site, and there were the other issues that I am sure you understand with regard to the fault on the bridge itself.

There are positives; indeed, there are always lessons to be learned. We upscaled the contingency plans; public transport was strengthened; there is now more monitoring equipment on the Forth road bridge that will give us an even better understanding of its behaviour; and there has been a degree of vindication of our view that building the new Queensferry crossing was the right thing to do. It will act as a substantial contingency for the Forth road bridge—and vice versa.

There are choices for the future with regard to the role of the Forth road bridge. Its use has been set out in the legislation, but a future Government might well have some thoughts about the role that it should play. The Queensferry crossing was to be a replacement bridge, but there might be other options for the future of the Forth road bridge, if it is well maintained.

I am happy to write to the committee about the extra works that we were able to undertake, which will give members a sense of what we were able to do during the closure. It will make my point by giving details about carriageway improvements, landscaping works, structural matters—

The Convener: That is what I was alluding to earlier. Resurfacing was one of the issues that were raised.

Derek Mackay: Absolutely. The closure in no sense caused delay; in fact, it accelerated works and led to their being much better timed, which

has reduced the need for further disruption, closure or anything else. We thought that it was fit and appropriate to do that work while we were repairing the bridge, which was clearly our number 1 priority.

I thank Mike MacKenzie for his praise, but the people who deserve that praise are, of course, the staff who worked in all weathers to repair the bridge. They knew that it was a priority not just for the Scottish Government but for Scotland. Again, I thank them all.

The Convener: Thank you. We have had a very comprehensive evidence-taking session, minister. I see that members have no final questions, but I wonder whether you wish to say anything else in conclusion.

Derek Mackay: I think that I have covered everything as fully as I possibly can. We will send the information on engagement this afternoon, and if you require anything else, please raise it with me. I said throughout the closure of the bridge that, when the engineers and experts were exposed to the Parliament, everyone would be filled with confidence that the Government and our agencies were making interventions that were right, proportionate and appropriate, that put public safety first and which sought to repair the bridge as quickly as possible. As a result, we have been left in a much stronger position.

The Convener: On behalf of the committee, minister, I thank you for your commitment, your very comprehensive evidence this morning and your willingness to engage in a constructive and positive way. I also thank Transport Scotland officials for making their experience and expertise available to the committee, not just today, but throughout the inquiry.

On that note of thanks, I suspend the meeting briefly to allow the witnesses to leave the room.

12:15

Meeting suspended.

12:18

On resuming—

Subordinate Legislation

Public Contracts (Scotland) Amendment Regulations 2016 (SSI 2016/47)

Water and Sewerage Services Licences (Cross-Border Applications) (Scotland) Order 2016 (SSI 2016/52)

The Convener: Agenda item 4 is consideration of two instruments that are subject to negative procedure. The purpose and prior consideration of the instruments are summarised in papers 5 and 6, and the committee is asked to consider any issues that it wishes to raise in reporting to the Parliament on them. I should add that no motions to annul have been received.

If members have no comments, does the committee agree to make no recommendation on the instruments?

Members indicated agreement.

The Convener: We now move into private session.

12:19

Meeting continued in private until 12:32.

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