INPUT METHODOLOGIES
ELECTRICITY TRANSMISSION WORKSHOP
2 MARCH 2010

[9.01 am]

CHAIR: Good morning ladies and gentlemen, I'd like to welcome you all to the Commerce Commission's workshop on electricity transmission. As we have signalled in the preparatory material for this workshop the Commission is working to determine the regulatory regime that will apply to Transpower under Part 4 of the Commerce Act 1986. This workshop, which we have set down for two days, is an important step in that process.

I'm Anthony Merritt, Manager of Electricity and Gas for the regulation branch of the Commission and I'll be Chair of this workshop. With me are members of the Commission who will be making the decisions required to fulfil the Commission's requirements and responsibilities under Part 4 of the Commerce Act. They are Commissioner Sue Begg and Associate Commissioner David Caygill.

The Commission Chair, Dr Mark Berry, is at this stage intending to attend tomorrow, as is Assistant Commissioner Pat Duignan for part of the day. Both Commissioners, as well as Commissioner Peter Taylor, who will not be participating during the workshop, will have access to the transcript to inform their deliberations for electricity transmission services.

Commission staff are also assisting during this workshop. With me at the table are Alex Sim, Bronwyn Ward and Paul Melville. Commission staff are also seated at the adjoining table. Bill Heaps and Dave Allen of Strata Energy will also be assisting the Commission during various sessions.

Just for the record and to help our stenographer can we please have the other people at the panel identify themselves and who they represent, starting with you, sir.

MR CLARK: My name is Marshall Clark from Transpower, I'm in engineering.

MR STRANGE: Patrick Strange, CEO, Transpower.

MR FLETCHER: Richard Fletcher, Regulatory Manager for Transpower.

MR SMITH: Clive Smith, Business Services Manager, Transpower.

MR MATTHES: Ralph Matthes, Major Electricity Users Group.

CHAIR: Thank you. The background to this workshop is well-known to participants in terms of the legislative framework and I won't revisit all aspects, except to say that the Commission is working to determine the regulatory regime that will apply to Transpower under the Commerce Act by no later than 30 November 2010. This is because Transpower announces its prices for the 2011/12 pricing year in December 2010.

The Commission released its Input Methodologies Discussion Paper and Transpower Process and Recommendation Discussion Paper on 19 June 2009. In these papers the Commission set out its preliminary views regarding its approach to regulation of Transpower. Following consultation it was decided that rather than discussing the Commission's preliminary views at the Input Methodologies Conference that was held in September 2009, it would be preferable to hold a workshop at a later date to deal specifically with the regulatory approach for Transpower.

In its 10th of December 2009 revised Transpower process paper the Commission notified interested parties of the workshop on the regulatory approach to Transpower would be held in March 2010. More recently, on 4th of February this year, the Commission published a consultation paper containing its draft recommendation to the Minister of Commerce, that individual price quality regulation be applied to Transpower from 1 July 2011 when the administrative settlement expires.

The Commission received eight submissions on this paper all agreeing that individual price quality regulation was appropriate for Transpower. The Commission intends to make a final recommendation to the Minister following this workshop and no later than April 2010.

A memorandum outlining the process, key topics, participants, the Commission's Emerging Views and agenda for the workshop was released on 17 February. The workshop will provide an opportunity for views to be discussed and aspects of the Commission's proposed form of regulation to be clarified to assist the Commission in

preparing its Draft Section 52P Determination expected to be released for consultation in June of this year.

Turning now to the procedure for this workshop I have a few introductory points. The workshop is intended to focus on the areas where the Commission wants to test and deepen its understanding of issues relating to the regulation of Transpower. The workshop is not an opportunity for parties to question the Commission. The reason for this is that the Commission's thinking is still evolving and it is important that the parties' views are expressed in the context of this continuing decision process.

However, during the process of the workshop various elements of the Commission's Emerging Views will be described more fully and if, for the purpose of discussion, it is necessary for participants to seek clarification regarding these matters such requests for clarification are welcome.

The appropriate point for the Commission to set out its full reasons in response to submissions is in the Draft Determination, as I said, due for release in June 2010. There is then a full submission round open to all parties at that time. In saying that, however, I hope the way that matters progress over the next two days provides an opportunity for some dialogue between Commissioners, staff and submitters and I would like informality advanced to the extent that it is possible.

The workshop has been organised around a series of topics or themes to facilitate discussion. The Commissioners and staff will move through these topics throughout the day and ask questions on them. While the workshop is focused on particular areas we wish to explore further, the fact that we may not refer to other issues in our questioning does not mean that we have reached a final view on any matter.

The workshop is simply focused on issues where the Commission considers that it will be assisted by further explanation and discussion. The Commission members are approaching all matters relating to the functions under Part 4 with an open and independent mind. I do stress we are still in the evolving stage right up to the point of writing the Draft Determination. As I've mentioned before we will fully take into account all submissions in response to our Draft Decisions.

While this workshop provides an opportunity for views to be discussed we'd like to reiterate that the various rounds of written submissions remain the principal avenue by which the Commission seeks and receives interested parties' views. Please recognise the importance of the written material you present throughout the consultation process and

the need for your written submissions to set out your positions in a comprehensive way.

We appreciate that those representatives on the panel will not be able to answer all questions posed. If necessary participants should feel free to defer to other representatives that they may have in attendance. The workshop is not adversarial and no party will have the right to ask questions of any other party during the proceedings unless requested to do so by the Commission. Our understanding is that all independent experts have signed the letter confirming they have read the code of conduct for expert witnesses in the High Court Rules and agree to abide by these when speaking in the workshop.

As you see the workshop proceedings will be recorded. Microphones are available at the tables for the speakers. We also have a microphone on the stand located behind the participants' table. Please speak into the microphone when making your presentation or answering questions and please identify yourself and the organisation you are representing or advising and identify if you are participating as an independent expert. Please speak clearly and slowly so the stenographer does not have problems with the transcript. Transcripts of the workshops will be available so all parties are able to revisit the discussions that took place at any time.

Following the workshop parties have the opportunity to make further submissions. These submissions are due two weeks from the date on which the workshop transcript is published on the Commission website.

The agenda provides for a lunch break and breaks for morning and afternoon tea. The agenda is flexible and we may need to make changes as we progress. Commissioners will not be available during the breaks. Tea and coffee will be available during the morning and afternoon breaks. The workshop room will be open during the breaks but will not be secure during the day, so please either remain with your material or only leave non-confidential material behind.

If we have to evacuate the building and in case of any emergency please exit via the main entrance to this room go down the stairs and out the front door of the hotel.

The Commission's contact person for this person is Alex Sim. Please do not hesitate to speak to Alex if any matters arise on procedure or the agenda, or you have any questions of an administrative nature.

I understand that the parties have been asked whether there is a need to discuss any confidential material in closed sessions and that there is no such need. If there's any differing view please let me know now.

In order to assist the parties in the planning of the participation of this workshop the agenda is arranged around key topic areas which are managing the timing difficulties for the first year of the regulatory period; approach for operating expenditure; approach for quality standards; approach for new investment contracts. These are the topics we'll be dealing with today, tomorrow will be focusing on the approach for capital expenditure.

Right, we're now going to move to the wider issues around the regulation of Transpower. I'll ask Alex Sim to briefly walk us through the timeline that you'll have received when you arrived. Thank you.

KEY COMPONENTS OF PROPOSED FRAMEWORK

MR SIM: Thank you Anthony. I will be speaking about the Commission's emerging view regarding the transition year which is the first year of the regulatory control period, or RCP1. As there are a number of options for how we treat the transition year this quick presentation is just to highlight the issues surrounding opex and capex reviews and the timing of setting the maximum allowable revenue. I'll walk us fairly quickly through the timeline that you should have in front of you shortly.

The focus will be on the key steps over the next 24 months. As prices for the 2012 financial year will be announced by Transpower in 2010, the Commission is aiming to have made its Determinations in advance of this to enable Transpower to hit its pricing deadlines. This means that the Commission will need to have made its Determination by the end of November 2010.

The timeline has Transpower's financial year at the top and highlights how the pricing year is offset by three months, so starting in April, with the dotted lines coming down. A number of key milestones are shown at the bottom with the little red lines, but you might be able to see those better on your handouts so I won't go into any detail here.

As you can see this shows the timing of when prices are set and take effect and when prices are announced. So you can see that prices are announced three months in advance of April when they take effect.

Under the settlement, the timing of the non-Part F capex review was such that prices for the year had been announced and taken effect before the capex review had been completed and the Commission's Determination was made.

The Commission's preference under the new regulatory framework for

Transpower is that decisions around opex and capex should be made in advance of prices being announced. However, if the Commission were to roll over the settlement under the current terms, which also include the timing of when the capex reviews are undertaken, prices for the 2011/12 year would again be being set on an ex-post basis.

If it was to undertake an ex-ante review of capex for the following three year period then the timing of that review would fall at approximately the same time as the ex-post review. So what I was trying to show here was that the bulk of the review is done there, and by the time we've consulted and made our Determinations it doesn't actually take effect until after prices have been announced and taken effect.

If we were to do it on an ex-post basis for RCP1, again they would be taking effect after prices have been announced and there would have to be some form of wash-up. The Commission's view was to undertake the 11/12 review earlier and complete this prior to prices being announced. That's more in line with the Commission's preference to move to ex-ante reviews.

As you'll see from this slide here one of the issues that crops up is that the capex review for the remaining years of the control period fall at approximately the same time as when we'd be doing an ex-post review, so the ex-ante and the ex-post reviews end up being at the same time. So our preference was to go to an ex-ante basis for the interim year and undertake the review at the same time as we're doing the review for the final year of the settlement.

The thing to note here is the approximate timing of the maximum allowable revenue being set. The Commission does currently have a view that if an Order in Council is made requiring that individual price quality regulation be applied, the latest information available at the time be used to set the maximum allowable revenue with any differences in the Final Determination, if there is insufficient time to take these into account, could be washed up when the next maximum allowable revenue was set in 2011. As you can see there we would be undertaking the opex review at the same time as the three year capex review.

The Commission's emerging view set out its preference to use the latest Determinations and move to an ex-ante approach for reviewing capex. If option 1 was the approach adopted then it is possible that some of the Determinations for the interim year might end up being inconsistent with the approach used for the interim year.

If the Commission was to make adjustments to settlement, noting that the

settlement was packaged to balance each of the individual elements quite carefully, then this may end up being a time-consuming process to ensure that at the end of making any adjustments the overall package remains balanced. I note that Transpower has already signalled it is seeking a number of changes to those provided under the settlement and we'll be discussing those shortly.

CHAIR: Are there any aspects of Alex's presentation that you require clarification on? **[No comments]** Okay, we'll move on to interim year issues, but before I hand over -

MR FLETCHER: Chairman, could I just make a few observations?

CHAIR: You may.

MR FLETCHER: First of all we agree and support the principle of setting a transitional year and we support the principle of rolling over the threshold, the existing settlement where possible and updating if we do have the information. I just note from the timetable that it does leave it very tight to get this year's pricing round done if the Final Determination on the transition year is November this year.

There's a sequence of events in the process that have to occur in order to get our prices out, which normally starts in August. We close down the previous year financials, Clive and his team do the revenue requirement calculations which are required to be audited. We then have to put that through the pricing model, which again is audited. We then have to get that internally approved and then we announce the prices as soon as we can towards the end of November. So unless we're working on draft positions for this year's revenue for that transitional revenue requirement then I think it could be quite tight.

I've just got one further point on the slide which I'll perhaps pick up with Alex later. I think you note in February 2011 you're talking about you've got a green box at the top which refers to setting the three year non-Part F capex. Presumably that will be the three year opex and the three year full capex as well.

MR SIM: Yes, sorry, that would be correct.

MR FLETCHER: Okay, thanks.

INTERIM YEAR ISSUES

CHAIR: Thank you. Okay, we will talk now about interim year issues, but before I hand over to Commissioners and staff for questions, I'd like to set out that the discussion around

operating expenditure at this workshop will not include matters relating to pass-through costs, particularly instantaneous reserves. Pass-through costs are being considered as part of the Input Methodology Determinations.

We are aware that this is an issue of importance and are of the view that this matter is separated from the discussion regarding the appropriate approach for setting operating costs. A separate decision made with respect to pass-through costs will simply flow through to the final operating expenditure level approved. The appropriate place for participants to provide their views on pass-through costs will be in written submissions on the Commission's Draft Determination in June 2010.

Please be aware that the Commission remains fully open minded to all views at this stage and will be seeking feedback on such matters at that time. For the same reasons this workshop will not cover matters relating to the transmission pricing methodology.

I'd like now to hand over to Commissioner Sue Begg who had some questions on the Commission's Emerging Views with regard to the interim year.

MS BEGG: Just before I start I just want to check to make sure that there are none of the other participants that want to be at the table. **[Two people join the table]** Could I just get those two people to identify themselves for the record.

MR SIMPSON: Bob Simpson, Chief Engineer, Transpower.

MR SALMON: Greg Salmon, Meridian Energy.

MS BEGG: Thank you. As Alex has noted, we've changed our position somewhat on the way we're going to approach the interim year and that results from just the fact that we'll have information from the Determination to help us, so we thought that rather than simply rolling over the settlement that we would use that latest information so that may include things like WACC and so on.

And also I note that in terms of the non-Part F capex, which currently is set as a constraint on expenditure, we'll be moving to a commissioned basis to make it more consistent with a revenue cap. So I'm just noting those changes just to check that Transpower and others, whether they have any views on issues that might be raised by that, any difficulties we should be aware of. So perhaps I'll start with Transpower then.

MR FLETCHER: Clive might comment on the movement to the as commissioned basis in a moment. But yeah, I think we agree, if we have revised some of the parameters, if we have a clear view on what the WACC is, for example, and we will have the non-Part F, at least expenditure, approved by that time, then obviously we should use that; we should

hopefully have a firm position on what the opex is for that year. And presumably the Commission will have satisfied itself with regards to the revenue model which Transpower's applying.

Just with reference back to my previous comment about the timing, our internal timing, as long as there's plenty of time for us to follow that process and announce prices in time then I think we're comfortable with that.

MS BEGG: Okay.

MR SMITH: On the commissioned basis, basically it's just really working out how to actually work through the logistics of actually doing that and any variations on that, so from the planning to what actually happens in practice. So it's just working through the details, so we actually know how it actually works on an ongoing basis.

MS BEGG: Okay. Any comments from Meridian or MEUG?

MR MATTHES: Just working back to the Minister's decision with respect to the type of regulation, I'm just wondering whether or not the passage of the electricity bill might hold things up if there's a delay there, just a bit unsure about that.

MS BEGG: It's fair to say that there are a number of timing issues if things don't go according to our assumptions. Just the Minister's decision, for example, which is outside our control.

MR MATTHES: But having said that I'm quite happy with the proposal.

MS BEGG: Okay, that's good. Given the time constraints, obviously in the interim year we'll be constrained in terms of the review of opex that we can do. So the proposal is to take the starting base and then escalate CPI. But obviously we understand, and Transpower's going to give us a presentation on the changes that they're seeking, but just wondered if there were any views on how we might do that.

At the moment the proposal is to take a base opex, escalate by CPI, but then make adjustments as necessary for changes that have occurred over the years. Just without getting into Transpower's details of the changes they want in opex, which we'll hear, did anyone have any views on that approach? Transpower?

MR FLETCHER: I think that Transpower's position is that it's a - we accept that in January, February and March 2011 both our opex and capex will be subject to a more detailed building blocks review. And I think it's a pragmatic solution to ensure that we can move into this new framework in the transition year. So yeah, we agree with that, subject to the comments we'll be saying about the impact of maintenance on our operating expenditures

in that year.

MS BEGG: And the escalation of basic expenditure by CPI that's for the interim year?

MR FLETCHER: From a point of principle for the non-maintenance components Transpower's comfortable with that position, indexing those at CPI from our current position. I think when we go through the slides, the next item on the agenda, I think we'll be able to explain that in more detail.

MS BEGG: Okay, thank you. MEUG and Meridian? **[No comments]**

CHAIR: Okay, thank you. We now have the slide presentation from Transpower. I think, Marshall, are you -

MR CLARK: We've also got handouts here if they'd be useful to anybody.

CHAIR: Yes, they would.

MR FLETCHER: Perhaps I could just set the context before Marshall talks specifically about the maintenance components of our opex. Just in doing that, I think, as most people know, our base opex expenditure, our opex expenditure base was set in 2006 by the Commission as part of the administrative settlement discussions. It was set following quite a detailed review of the various operating expenditure components, which basically include the maintenance operation, direct grid costs of maintenance costs, IT operations costs, and investigations costs, and departmental staff costs.

It's worth noting that half, 50 percent, approximately 50 percent of our total annual opex relates to grid asset maintenance, and Marshall will talk about that in a minute. So in 2006/7 our operating expenditure base was set at $198 million excluding reserves, and a CPI index for the following five years was set at CPI. So that's the threshold that we're obviously referring to.

I just thought it might be useful just to say where we are four years into this. Cumulatively our actual expenditure over the last four years has been pretty much in line with the CPI path. We've had some years where we've spent under the CPI and some years where we've gone over. We've managed to do that despite increasing maintenance over the last three years at a rate significantly higher than CPI.

And as Marshall will explain, that trend needs to continue not just for the transition year but for the foreseeable future. And that's in line with the discussions we've been having with the Commission about the need to increase our expenditure on the replacement and refurbishment capital expenditure which we've been discussing with Strata.

So just going back to Commissioner Begg's point; moving forward for 10/11 and then the transition year 11/12, we see a need, and Marshall will explain this, for a continued increase above CPI and a continued increase above the current levels of maintenance expenditure and the various volume drivers and input cost drivers which Marshall will go through.

For the other components, the non-maintenance components, there have been movements from the assumed forecast in 2006, but our position is that it would be appropriate bearing in mind the timing constraints for the transmission year and the need to avoid having to do a full building blocks at this stage to lock those in at CPI from our current position.

So just as a headline and just to give the - our 2010/11 maintenance expenditure is $117 million, and if you lock the other components at CPI that would leave us, if we rolled over the aggregate threshold at CPI, that would leave us with a shortfall of some $13 million which we wouldn't be able to recover. So our position around reopening the operating threshold centres directly on the maintenance case which Marshall will just go through now.

MR CLARK: My name's Marshall Clark, Asset Performance Planning Manager which is an engineering group in Transpower. So this presentation is an overview of the issues facing us with maintaining the grid. This slide is just a summary of the points I'll expand on shortly. You've already heard from others that maintenance expenditure has increased steadily and above CPI. We do forecast an increasing need for maintenance because of the natural life cycle of the assets on the grid, and I'll explain more about that shortly.

The main drivers are simply more work to be done that is coming due because of the age of the assets. However, there's also other factors that make work more difficult and more costly. There's been changes over the past few years that have led to work becoming more complex and more costly. There are also in our industry continuing shortages of skilled labour and very attractive positions available overseas for some of New Zealand's skilled labour in our industry. This causes some pressure on our input costs.

Finally, as we begin a new period of expansion and growth in the grid itself and making new investments, we see some increase in the scope of substation assets to be maintained.

So we go to the next slide, that's slide 3. The fundamental point here is that there's

an increasing quantity of grid assets that require work. There's a wave of work resulting from the age of the assets and the environment that they sit in and the corrosion conditions, particularly on transmission lines, that they face.

This wave of work will continue for a number of years. We expect to be able to forecast this with a lot more accuracy in the submissions we'll make at the end of the year and that will be reviewed in the first part of next year. But it's certainly our view that this wave of work will continue for some time at an enhanced level before eventually dropping back.

We have attempted to hold maintenance expenditure in previous years by deferring non-critical maintenance. But as I'll show on some photographs shortly, there becomes a point where deferred maintenance cannot be sensibly deferred any longer.

The next slide shows a helicopter level view of maintenance expenditure set against the total opex allowance and variance against the threshold. As Richard's already pointed out, carrying on as we are would leave a $13 million variance against the allowance at the moment. So I don't need to dwell on that perhaps but I'll move on to the more details in the next slide.

To help understand the material that follows it's just worth noting that we categorise our maintenance expenditure essentially between transmission lines and substations and routine and projects. So a maintenance project is typically a non-recurring item, normally of relatively high value compared with the more ordinary routine maintenance tasks.

The next slide shows a break-down of our actual expenditures and our forecasts for the two years 10/11 and 11/12 broken down in those ways I've just explained. I'll have some graphs shortly which make it a little easier to see what's going on amongst these numbers here.

But if I could draw your attention to the projects line on transmission. You'll see growth from $6.4 million actuals in 06/7 to the forecast of $24 million in the forthcoming 10/11 and 11/12 years. That's a very substantial growth and it is exactly this wave of work that I spoke about previously. You can perhaps look at the rest of those numbers at your leisure, but that projects line on transmission is by far the most significant area of movement.

If I go and look now at what's really a driver for this, this chart on slide 7 shows the age based on original commissioning dates of our transmission lines. And while some

work has been done on the lines over the years, this still reflects largely the structural elements of the transmission lines; the foundations and the steel lattice towers and the major elements. We find that around New Zealand, particularly in the coastal regions, and Northland's an extreme example, that transmission towers that have been there 30 years or more are starting to experience significant deterioration. So there's a wave of work that's now arising corresponding to the wave of installation work that we see between the periods 30 to 60 years ago. I'll come back to those points shortly.

Overall, transmission line expenditure so far has increased over the period of the settlement by around about 15 percent compounded. That's the aggregate of project and routine maintenance on transmission lines.

If we look first at routine maintenance cost drivers, there are movements there. Despite the majority of the movements being in projects, routine maintenance has moved as well. The main pressures there have arisen from our changes in risk management stance. Over the years, and particularly following a number of incidents, our stance on transmission lines has changed. We are doing more work than we were doing previously in order to manage risk.

Many in the room will be familiar with the Otahuhu earth wire incident of 2006 which caused extensive loss of supply in Auckland. One of the consequences of that incident was a reflection and review on our frequency of condition assessment, and since that time we've had a much more intensive regime of inspection and condition assessment on more critical assets such as the earth wire that had fallen at Otahuhu.

Another risk management stance change has been the management of access roads and bridges. A number of years ago Transpower took the stance that these were largely the landowners' concern and that so long as we could meet our needs with getting to the transmission towers then that was sufficient. But following the Berryman case we've taken a much more conservative and interventionist stance, and so most of the access roads and bridges that we use are now maintained to the relevant Transit New Zealand standards, which is much more demanding than we would require for our own purposes.

So this is a matter of a safety measure and public safety and Transpower taking responsibility for things that it has some control over. However, we don't own these access roads and bridges and so all this work, even if it's life extending, is inevitably expensed and we don't have these as assets on our books.

We've also taken a more conservative stance about trees close to lines. There

were a number of incidents some years ago, very serious safety incidents that occurred as a result of a former practice where trees close to lines were sometimes felled when the tree could potentially approach the line to within the minimum safe distance.

So following those rather serious safety incidents and actual tree strikes, we've taken a more conservative stance. This leads to some increase in the cost of tree control or vegetation management as we call it. That vegetation management in itself has become somewhat more complex in the passing of the trees regulations and the requirements for administrative processes and dealing with the owners of trees. There's a lot more landowner engagement. Many of these landowners have higher expectations of process and of our conduct in trimming trees, so this does lead to increased cost.

Finally there are input cost increases that have gone above CPI. Despite the efforts we put into cost-effective procurement, it's been hard to hold these rates against international pressures. The industry has lost a large number of linemen overseas in recent years because of the attractiveness of overseas rates for these skilled people.

If we move on, this chart just shows some of the elements of routine maintenance. You can see the upturn in condition assessment and quite notably the upward slope in access rates in bridges. These trends won't continue indefinitely, they will stabilise out and we will be clearly modelling and forecasting those towards the end of this year in our submission for the three year period.

So we now move to projects, which I drew attention to earlier as being an area of significant movement from $6 million in 2006/7 to 19 in the current year and $24 million forecast in the two years to come. And it's in response to the quantity of aged components on towers and conductors where replacement's required. If we were to replace an entire tower that's a capital investment, but replacement of elements of towers is expensed according to our accounting practice.

There are a number of components on transmission lines, either on the conductors or on the towers themselves, that require replacement as a result of vibration or conditions that arise from corrosion. We are also spending money to monitor these assets more closely. We're spending quite substantial sums on testing of age of conductor and of monitoring the condition of conductor to make sure that these costly projects of conductor replacement are done at the right time, at the appropriate life cycle point.

The next graph on slide 11 shows the trends on maintenance projects on lines over the past few years. You'll see a steep upturn on the line with the triangles on it which is

structures. This is steel work on towers essentially, so steel work that is needing to be replaced. There's also an upturn in foundations.

Similar work, the foundations buried in the ground have suffered deterioration over time and require repair. Some major works on foundations are, if they're of a sufficient scale, will be capitalised and we have a separate programme of complete foundation replacement that is capitalised. But there are minor works on individual foundation legs and repairs that are expensed. And that forms some of that expenditure there.

Here's where it starts to get really interesting. We see the photographs of actual assets. These steel tower attachment points are essential for holding up the transmission line. They're a large steel component on the end of the cross arm of the transmission tower that supports the insulator which supports the line. These are heavy section steel components, with a long lifetime but not infinite.

In areas, particularly in Northland as I mentioned before, and these images do come from Northland, corrosion is setting in and it gets to a point where, if I can just use the pointer, up in here there's a swivel plate, there's a better shot of it there. That is an axle effectively, or a hinge point. And this axle point must be allowed to move freely. If it were to seize up with rust the insulator string is exposed to excessive forces, the insulator string ultimately could fracture, dropping the conductor on the line leading to an interruption and a serious incident.

So these works can be deferred when maintenance budgets are pressed, but there comes a point when it's no longer prudent to defer the work. The lines that I've shown you, the photos there supply the Marsden Point refinery. A serious interruption to that refinery has severe consequences for New Zealand. So it's imperative that we undertake the work before failure is likely. Right around New Zealand there is a large and growing volume of this character of work to be done on steel towers.

If we move on, there's also maintenance replacement work to be done on conductor components. Our conductors are joined by joints which look much like this image here. Many of those have a very long life, as long as a conductor, but some are at a point where they do require to be cut out and replaced. We have a programme of work to undertake this.

There's also a programme of work to replace devices called vibration dampers, which I've shown in the image here, which are used to take some of the wind induced

vibration energy from the line and absorb it and prevent it causing undue shaking and wear on the components that clamp the line from the insulator.

If we move on now past transmission lines into substations. The situation is somewhat different. The aggregate expenditure on substations, both project and routine, has not increased to the same extent as lines. However, there are pressures and looking ahead for the next couple of years we can expect significant increases will be required.

We need to increase routine maintenance in some areas to address poor asset performance. In our submissions at the end of the year we'll be revealing the latest round of benchmarking information which shows that Transpower substation equipment continues to perform poorly in international terms and there's a pressing need for us to improve that poor performance. In some cases extra maintenance expenditure is required.

We have faced pressures from inspection costs for compliance with new requirements for resource consents and for the hazardous substances and new organisms regulations. We face some increased costs arising from expansion of the network. One of these is the access charges for the cable route that we'd be putting across the Auckland harbour bridge. As with lines we face increased input costs and some costs for contractor training. Because of the significant turnover of the labour in the workforce there is significant cost associated with bringing new workers up to speed, particularly with our safety requirements, but also with our technical and competency requirements.

Finally there's work inside substations themselves that will affect maintenance expenditure. We are putting new assets in place at Otahuhu and new substations at Drury and Whakamaru North and some new components inside existing substations. We will be decommissioning HVDC Pole 1 which will produce some routine maintenance cost savings, but the new converter station will itself have increased maintenance costs.

If we move to projects, they're highly variable between years. Maintenance projects are frequently dominated by a small number of large projects, often the repairs of power transformers. We are seeing a certain number of power transformers fail and these individually are in the millions of dollars to make temporary repairs or bypass arrangements.

We expect, unfortunately, that there will be a small number of these major failures each year for a number of years until the older transformers are retired. And even new transformers unfortunately can fail. So we need an allowance to pay for these sorts of projects.

We also have emerging requirements for new project work to undertake a substantial engineering review of the seismic strength of existing substation buildings. The New Zealand standard for seismic strength has recently been changed and our infrastructure being an absolutely critical infrastructure needs to meet the highest levels in that standard. We need to review the legacy buildings and to make sure that they can withstand the latest - or are strong enough to meet the latest expectations.

My last slide just deals with what we're doing to try and hold operational expenditure on the grid. We are undertaking capital replacement of maintenance intensive types of equipment. Some good examples of those are the retirement of air blast circuit breakers and minimum oil circuit breakers which have proven to be high cost and somewhat unreliable circuit breakers. These are being progressively phased out. The last air blast circuit breakers will be removed from the network within two years. And we're quite confident that we will see some savings in maintenance from the replacement with modern circuit breakers.

Equally we hope to replace a large population of outdoor 33 kV circuit breakers where they're included in outdoor switchyards. Our prime driver for this is safety improvement but there will also be operating cost reductions. As we replace our older single phase transformers, again we will see reductions in operating costs. And the same is true with replacement of mercury arc valve Pole 1 converter stations.

Finally, we're undertaking a review of our contracting arrangements to ensure that our contracting out processes are efficient and effective and are the best we can achieve. That process has commenced and is underway and will roll through until 2012. It's aimed at improving performance, simplifying the management of the contracts, but also achieving cost efficiencies.

So there's an overview of the current situation that we see on maintenance expenditure on the grid.

CHAIR: Before I ask Commissioners and staff for questions, does MEUG or Meridian have any comments to make on Transpower's presentation? Mr Matthes do you have any comments?

MR MATTHES: No, no comments thank you.

MR SALMON: Is this time for questions or comments?

CHAIR: Comment.

MR SALMON: No, I've got a few questions.

CHAIR: Perhaps if you have a question for Marshall.

MR SALMON: I get a sense from the work that you're doing that you're improving some of the standards of maintenance and just there's a development towards improving quality, and I just want to see if I can work out whether we're expecting an improved quality outcome with regard to this additional expenditure on opex essentially.

MR STRANGE: Perhaps I can put that in context and answer Greg if I may. Just to go back slightly in context, you'll know shortly after I arrived we commissioned the Dupont Report which, in the middle of 2008, sort of said you've got a problem with aging assets. What you're starting to see now is as we look with more granularity with individual assets, and to just take one of Marshall's probably biggest cost drivers is that structures point.

Those cross arms and the attachment points, if they're painted early very low cost, can be done live line, and we are accelerating our painting work, as you know, which will come under non-part F, because it's capex. If you leave it a bit longer, ideally you do have to change out the bolts, that can be done live in a lot of cross arms, not a huge issue, no outages, and the cost is manageable.

The situation we've got into when we look at it with more granularity is a lot of these cross arms are getting to the point where you can't - nobody can go up there and knock the bolt out, they're frozen in. At that point you have to take an outage and lower the whole cross arm to the ground, and the cost probably goes up by factors of 10 or 20 plus we have outages going on. And we're right in the midst of that point. It's basically been left too long. And then finally, I mean if we leave it a little longer than that you've actually got to replace a whole cross arm.

So Greg, to your point, if I may, yes, you will see quality improvements on it because it lowers all the outage requirements etc, and also removes the prospect of catastrophic failure if we have an insulator break loose or something. And I think over the life cycle terms you'll also see a cost reduction.

But the problem possibly, if I can perhaps criticise the past, it's typical of infrastructure companies perhaps, is they weren't correctly looking at life cycle cost of doing this maintenance. There tended to be a view we need to make it last another 20 years so, you know, we can defer it. Whereas you look at the whole life cycle of a transmission structure that's going to be there for the next 60 years there's no doubt what you've got to - you know, the most effective way of doing it is to paint it a bit earlier and

that will often save some of that.

We're beyond that point, we're at the point where we've got to spend some money and try and avoid the prospect of having to take the cross arm down. So that answers your question, thanks.

CHAIR: Any more questions?

MR SALMON: Yeah, one other question, I just wanted clarification; with the decommissioning of Pole 1, that has substantial maintenance costs because of the age of it. As Pole 3, is that likely to reduce maintenance costs for the overall HVDC or to, well increase or decrease DC costs as a result of that of the new pole going in?

MR CLARK: We have yet to finalise our forecasts of future maintenance costs for HVDC Pole 3, but it would be fair to say that the aggregate HVDC maintenance would be expected to decrease somewhat.

MR SIMPSON: Perhaps I could add one more comment to that. We've still got the line if it's a common denominator for both. So effectively it's only the end components that the costs will go down.

CHAIR: Any more questions from the participants? Commissioner Begg, have you any questions?

MS BEGG: One of the reasons given for the increase in maintenance is addressing the backlog. I just wondered if you could give us a feel for how long that process will take, how many years before you can say that you're up to where you should be, and how significant is that as part of the overall costs?

MR CLARK: I don't feel confident in giving you a view on that right now, that's the work of this year. So that by the time we make the submission at the end of this year we will have a much firmer view about the wave of work. Now the wave of work will be unique to a particular asset class. So it won't even be for transmission lines, it will be for components of transmission lines.

The wave of work on joints, the wave of work on foundations, the wave of work on insulator attachment points. So it won't be something we can give a single point answer to. And it will be by asset category which will take some time this year to model and forecast the wave of work to at least get us out beyond the end of the three year period. Ideally we'll be forming a ten year view, something like that.

MR STRANGE: If I can be silly enough to give you an answer, in experience with distribution companies going through similar things, I mean don't hold me to it, but I think in three or

four years on the line work you can get on top of it and get yourself back in good shape. I hope I'm not proved wrong.

MR SIMPSON: Just to add to that, we've now got a lot more strategies looking long forward at key assets, so I think that will help us try and get ahead of the fire.

MS BEGG: Thank you. One issue that's always raised is the cost of labour and especially the specialised labour. I just wondered, given the change in economic circumstances, have you seen any relieving of the pressure on wages over the last year?

MR STRANGE: It certainly hasn't been a strong pressure upwards but we've still, I mean, got the problem of people walking to Western Australia etc. I think if there's an opportunity it's to better smooth our work. Because part of the pricing the contractors have to put in is down time, and we get issues like this year where Otahuhu B is out unexpected for, I don't know, three months I think it was, and just shunts all our work around. No longer you've got 350 megawatts in Auckland so outages get shunted. So you find contractors, stupid as it may sound, sort of having to sit on their hands for 10 or 12 percent of their time, and they build it into their prices.

I think it's inevitable unit rates, hourly rates will keep pushing up and Australia will push them up. I think our opportunity is to fill in that 10 percent by getting a better integrated work plan so we just keep the guys busy and the contractors can see that.

MS BEGG: Okay, just one other issue. One of the reasons driving cost is risk management and good electricity industry practice. Are you saying there that good industry practice has changed, or are you saying that Transpower was behind the 8 ball before and now is bringing its processes and its approach up to that level?

MR CLARK: Good electricity industry practice does change over time. The publication of the new seismic risk standard which applies to all of New Zealand in structural engineering is just one example. So the previous benchmark for strength of buildings was that the collapsed limit should be somewhere around about 1,000 year return period earthquake, it's now 2,500 year for buildings of our criticality. So that produces the need to go and do the research, go and re-evaluate the legacy buildings.

So absolutely, good electricity practice moves on with time. We have to be an industry that learns from mistakes, either made here or overseas. And so codes of practice such as that standard, means of maintenance, all sorts of things move on in response to our own experience and that of our overseas colleagues and international partners.

So in respect of the things I spoke about, the Otahuhu earth wire incident, the tree strikes and so forth, those are perhaps examples of a bit of both where we have learned something ourselves and we've then changed our stance.

So it has resulted in more expenditure, hopefully in targeted areas, that do manage the most critical risks. But in some cases it's not only just a risk of loss of supply, it's also a safety risk because some of our former practises around tree trimming close to transmission lines have been proven to be unduly hazardous, and we've needed to make a change.

MS BEGG: So that will be an ongoing pressure on costs, there will be an ongoing pressure to improve or reduce risk, do you think, over time?

MR CLARK: Our task this year is to forecast that. We believe that we're getting a handle on vegetation control and we would hope not to have to increase vegetation control in the way that it's increased over the past five or six years beyond what it currently is at the moment.

So I wouldn't be forecasting major escalations in all areas because we've now changed our risk management stance around condition assessment and around tree trimming. And we should have now a reasonably firm basis on which to forecast the costs for the future without expecting substantial growth. The areas of growth are more to do with the asset life cycle driven by corrosion and wear.

MR STRANGE: But to answer the question I think standards are lifting and I think that is going to be ongoing, you know, where we'd put Hamilton on N for sort of three weeks at a time we just can't do that at a time, society doesn't accept it. So I think it is an ongoing pressure.

MR SIMPSON: I think an example which is due on the 1st of April, for example, in the new electricity regulations which are about to be released there's a requirement for safety management systems for public safety. While we have a big comprehensive list of documentation in terms of that, it's another document we need to put together to demonstrate that and it has to be audited and things like that as well.

MR CLARK: A further point from my recent experience at Marsden Point talking to the refinery, we've explained to them the programme of work on transmission lines that go from Auckland all the way up to the Marsden Point refinery is such that we're putting the refinery on single circuit security for between 50 and 70 days in the next couple of years. Now that's quite a concern to them and to us, and we're having to look at ways in which

we can perhaps shorten the maintenance.

But inevitably as you try and compress the maintenance exposure, the outage exposure, it tends to put the costs up. You're looking to try and do more work in a shorter period of time which means more gangs, which runs the risk of having more lost time or dead time, more use of helicopters for example.

So there are pressures all over the place to try and meet expectations of customers for a high level of availability of security, and some of these flow back into expense issues.

CHAIR: Associate Commissioner Caygill.

MR CAYGILL: Just perhaps on that last point, I've got another question I was going to come to; is there a balance point between the costs that somebody exposed to the risk of outage like the refinery - it's a good example, I think, because it's so specific, but it could equally be a group of customers - is there a way of thinking about the costs, the balance between the costs to which they would be exposed, the risk of outage, and the increased costs that you are facing as a result of trying to shorten the period to which they're exposed to those risks?

MR CLARK: You're asking a question about the cost of reduced security, the risk cost of reduced security. And it's something that occupies our minds a great deal. We don't have a magic formula for it, but I would make the observation that a number of our recent incidents of loss of supply have occurred at times when there's been a network element out of service for planned work. So these are not theoretical, these risks are being realised in quite a number of our recent losses of supply.

MR STRANGE: We do, of course, try and put a value of lost load, but I think with your work, the trouble is the extreme events. If they're regular events you know the probability of the event quite well. But right down there at the end of the curve, losing a refinery for, say, two days and New Zealand has no refined petroleum, so the transport structure breaks down. So the cost is huge but the probability is quite low that if you have a line out for ten days at N that something will happen to it.

What we can't put a number on reliably, we're learning around the world, is the probability of that outage, as containers running into lines proved to us. And there is theory being done on that which says that our sort of normal Gaussian distribution, which says these are 1 in 1,600 event years, the mathematicians - I won't get into it because I get lost - are telling us that we've got it all wrong and these events come along a lot more

often, and it's certainly what society - what it's showing us. And those events are very difficult to economically value, you know, losing Auckland for two months with a CBD crisis, it's almost a don't go there number to be blunt.

MR CAYGILL: I guess what I'm interested in is simply understanding whether you do try to make these evaluations, albeit they're very difficult and involve inevitably still a degree of guesswork, in which case is it potentially the case that the balance is overwhelmingly in favour of facing the extra cost, or is the balance closer than that, or alternatively again is your assessment that this kind of balance might be available in theory but in practice is really just too difficult to do?

MR STRANGE: A bit of each I think.

MR CLARK: I think it's also worth observing that it's not just simply Transpower making a call, there's a substantial process involved in notifying proposed outages a long time in advance and there's intensive consultation takes place with customers to help them understand the consequences. And it's not at all uncommon to have customer feedback lead to significant changes of the outage programmes to try and manage the risk exposure. So we take account of customer feedback.

Often the customer's preference is already known at the time of the design of the outage programme so the customers hopefully won't be too surprised when they see the next year's programme. But in general we are open to feedback and are able to shift outages within reason.

However, there are always competing requirements. The dairy industry would always like to have the grid on reduced security at times when the dairy factories are not processing milk, but that's the time of peak load on the network for winter loads. So there's a conflict there that's often difficult to resolve. I can assure you there is an extensive consultation process running all the time, and as we speak at the moment, around outage planning.

MR STRANGE: I think you put it well, Commissioner, when you say some of them are just, you know, it's hard to get your head around the economics, while we do extensive; and some them are truly just informed by international practice. You have a major city, the economic heart of the country, do you put it on 'N'? And just around the world, be it Sydney or New York or a Chinese city, there is an emerging practice that says no, that's not somewhere you go. So there's shades of everything.

MR CAYGILL: Just to confirm, Marshall, the comment you just made gave me a different

thought which I'd like to be sure I understand correctly. In some cases, having done your consultation, having notified your outage, are you saying that some increased costs will arise, as it were, in order to try your best to keep to that programme? Something else happens, now you're faced with abandoning that outage or facing the increased cost, and it's pretty obvious that at that moment the increased cost is the, as it were, lesser overall cost.

MR CLARK: We will frequently face increased costs as a result of changing our outage plans. A common instance of this would be when a customer asks us to undertake work during weekends, that's a simple but obvious case. And although it's not good for the workforce to be asking them to work every weekend, we do in fact undertake work in the weekends and on public holiday weekends in order to reduce the security risk for customers.

MR CAYGILL: Mr Chair thank you, that's as much as I want to pursue with that. The only other question just very briefly I wanted to ask relates to slide 14 in the presentation. You referred to the access charges for the cable route across the Auckland harbour. I simply wanted to know whether you have now actually got a concluded agreement in relation to that.

MR STRANGE: There's two - and nobody's here - I think the bridge agreement with Transit's been fine for years. The other more substantial one is the Vector tunnel. And we have agreed in all the terms, and I understand it still has to be agreed by the Vector board, I don't know whether any of my colleagues know whether we've ticked it off or not. But we've basically shaken hands on it all and it's about the level that you would expect from your other role. We got a good answer.

MR CAYGILL: That's fine, I wasn't interested in detail, just knowing whether the agreement had been reached. All but, that's good.

CHAIR: Commission staff, do we have any questions?

MR MELVILLE: I note that the maintenance costs that we were going through in the presentation accounts for about 50 percent of total opex costs. I just wondered if Transpower had any comments on the movement on the balance of the opex category in total.

MR FLETCHER: I can just comment briefly on that Paul. As I mentioned earlier, the key components of our non-maintenance operating expenditure are departmental costs. Just to give you a bit of a trend over the last four years, they've increased significantly less than CPI. We've managed to constrain at the head count numbers within the business

below the forecasts that we made to GHD when they reviewed those in 2006. We would propose, as I mentioned earlier, to keep that at a flat level, at a CPI level for the next two years pending the detailed review that you'll be doing in January which will look at our three, four, five year forecasts, long-term forecasts of departmental costs.

The other big component of the non-maintenance opex are IT operations. These are our licence costs and our out-source services around IT, primarily in the telecoms areas. They've increased significantly more than CPI over the last four years. We think there will be an increase over the next two years, particularly that we've looked at, but they peaked at around 2008/9 in terms of the big increase. That reflects the telecoms programme which we initiated in 2007 and the change to the out-sourcing arrangements.

So to answer your question I think there are pressures on the other components, but we believe that at least for the next two years we can keep those at a CPI increase. But then we'll be making a case to the Commission for what the longer term picture is in January/February next year.

MR MELVILLE: Thanks. There was just one other, it relates to Commissioner Begg's question about increased input costs. I just wondered if Transpower had any external information that supported the increased input costs that you referred to in the slides.

MR FLETCHER: Not at my disposal now, we do have information - I think one of the key input costs increases are the tendered maintenance contract labour rates and we've got obviously historical, and we're going through that historical data and we will have data as we conclude the current round of contract negotiations. So obviously we could make that available to the Commission.

MR MELVILLE: Thanks.

MR SIM: Yeah, I'd just like to clarify another point on slide 4 which has your opex numbers. It shows that the increase over the threshold escalated at CPI is around about $13 million for the 2011/12 year, but you were talking about savings in other areas. The $13 million looks primarily to do with the increases in maintenance. Does that take into account some of the savings that you'll make in other areas?

MR FLETCHER: Perhaps I could just summarise that by saying that if you took our 2006/7 maintenance level of expenditure, which was $82 million, and extrapolated that up at CPI, although it wasn't actually - components of our opex weren't extrapolated at CPI, but if you index that to 2011/12 at CPI then our expected maintenance would be $92 million roughly. Our actual forecast expenditure on maintenance is $117 million, some

$24 million more than that CPI threshold.

What we're saying is the net increase on the threshold of that $24 million increase will be $13 million. So the difference between the 24 and the 13, to answer your question, is netted off by movements or savings in other areas against that CPI line. It's quite complicated to explain but I think that's the summary.

MS WARD: Just a short question on interim year. Your forecast of about a $15 million increase in maintenance over a two year period, are you confident that you can actually do that maintenance given you've made comments about the shortages of the labour and that sort of thing?

MR FLETCHER: Perhaps I can ask Marshall to comment on that and Bob to possibly comment on that.

MR SIMPSON: I think with adequate notice our contractors are capable of resourcing up to this, we're giving them a forecast out three years. The biggest issue our contractors have is lack in certainty. And once they are clear about what are the resource requirements they will work towards training and recruiting.

MR FLETCHER: I think if I could just add to that, I think, as Patrick said, the initiatives that we're taking, and I think that we've been explaining to Strata over the last few months around packaging work up into larger volumes, smoothing the work flow, trying to work with contractors to look at kind of where the pinch points are, I think that flows through also to opex as well as the capex contracting arrangements.

CHAIR: Any other Commission questions? Do any of the points raise other questions that Meridian or MEUG would like? **[No comments]** Okay, Paul do we have time to start opex or do you think -

MR MELVILLE: No, have a break.

CHAIR: We'll get on to our Commission approach to our operating expenditure after the break, I think we'll finish a bit early. But if we aim at coming back about quarter to 11 please. Thank you.

Adjournment from 10.14 am to 10.45 am

OPERATING EXPENDITURE (2012/13 - 2014/15)

CHAIR: Ladies and gentlemen, if we can resume our seats please. Thank you. I'll renew

Commissioner Begg's invitation, if anyone else wants to sit up the front on the panel please do so. Very good. The session up to lunch is on operating expenditure. The Commission's approach, and depending how we go we might bring forward the approach for quality standards, but we'll see how the discussion goes on operating expenditure. Paul Melville from the Commission will be leading this session so I'll hand it over to Paul.

MR MELVILLE: Thanks Anthony. So this is focusing on the operating expenditure regime for the last three years of the first regulatory period, so it's 2012/13 to 2014/15. The Commission's preliminary view in the Emerging Views paper was that under individual price quality regulation it would set an operating expenditure allowance for the regulatory period based on an ex-ante assessment of Transpower's operating expenditure forecasts, and obviously this would form a component of the building blocks analysis used to determine Transpower's allowable revenue.

Aside from the incentive mechanism which we can discuss in a few minutes, I'd like to get the parties' views on the Commission's proposed approach to opex in the Emerging Views paper. If I can start with Transpower.

MR FLETCHER: Perhaps I could just give a quick summary. I think we support the move to an ex-ante building blocks approach. Obviously the criteria against which that assessment is undertaken will need to be clearly defined. I think your paper starts that process, so we welcome that. As we'll get into later, there are, aside from that general principle of supporting that, there are issues around provisions for reopening etc and how the incentive mechanism will work which need to be clarified, but we'll be getting to that. But from a point of principle we're supportive of it.

MR MELVILLE: Is there any comment from other parties? **[No comments]** Appendix C of the Commission's Emerging Views paper sets out the opex information the Commission would require from Transpower and it includes a draft scope of the Commission's opex review. The opex information required included the quantitative and qualitative information. Again I'd like parties' views or comments, suggestions regarding the proposed information required and the approach and scope of the Commission's review of opex for the three year period.

MR CLARK: I'd like to make a comment about item 3(e) subpoint 5, cost benefit analyses. Maintenance is a risk management exercise. The decisions on the scope of work to be undertaken and the frequency and the various quality standards around maintenance are

made with a composite range of factors taken into account. The most important of these is good practice.

It's not always easy to factor in all of the risk elements. We talked previously about the risks associated with taking planned outages on the grid. These are not easy to quantify. The risks associated with maintenance and the risks that maintenance is intended to mitigate are varied and not easy to quantify. I'm at the moment unclear about the extent that the Commission might expect us to undertake cost benefit analysis of our maintenance processes, policies, practises and standards.

We currently, as I said, refer to international good practice as the most important reference point. Because these are difficult decisions to decide on the scope and extent of maintenance requirements for a particular asset class, and the frequency of such maintenance or the conditions that should prompt such maintenance, we find that frankly checking with other people is very very useful.

We do also undertake numeric benchmarking so that we can find out from others how much they spend on maintenance of certain sorts of equipment, and that gives us some kind of guide as to whether we might possibly be over-maintaining or under-maintaining some of our assets. But it is an issue that causes me some uncertainty in how to respond to this request for cost benefit analysis of maintenance opex.

MR STRANGE: I think cost benefit has an important role. Some maintenance tasks lend itself quite well. Some of this tower work etc you can look at life cycle costs and it's a matter of when and which maintenance you do. But, as Marshall says, some of the stuff around outage management etc, I mean it's just so complex and the methods so uncertain I don't think there's any transmission company in the world that would try and do a cost benefit analysis on some of it.

So as long as the wording in it reflects the reality of the situation, unfortunately we can't get away in our business from using sort of sound judgment and learning from others, and sometimes that defies a spreadsheet, and the spreadsheet really just becomes an exercise, to be blunt, to justify the answer you've come to with judgment and talking to your peers. So I think we've got to be careful, is what we're saying about the wording of that.

MR FLETCHER: That comment aside, I think the overall approach of focusing on policies, processes that we have in place, looking at assumptions in our quantitative forecasts, the benchmarking that we might do, and then looking at how we've applied those processes to

forecasts, that's not dissimilar to the Strata approach for non-Part F and we do support that as an overall framework.

MR MELVILLE: Thank you. Is there any comment from the other parties?

MR MATTHES: Yeah, just on the cost benefit analysis, I think Transpower mentioned that they do life cycle analysis and I think that's a good place to start. I think we do have to be pragmatic about this, but whenever you're looking at making choices between spending money today or next year or the following year that does need some sort of analysis, it's as simple as that really.

MR SIMPSON: Could I add one other comment just to put maintenance into context. Maintenance is about inspecting equipment and repairing equipment, it's not necessarily the full replacement refurbishment. So there's a lot of work of a routine nature we need to recognise. So, you know, we could do a cost benefit of whether we felled this tree or not, but in reality a lot of that work has to be based on good practice and industry requirements and rules that are imposed on us in terms of tree trimming and things like that. So we need to make sure when we look at maintenance we are looking at it through the right porthole.

MR MELVILLE: Okay, thank you. If there's no other comments on that I was going to move on to the operating expenditure incentive regime. With respect to the operating expenditure incentive mechanism the Commission considers that Transpower's opex forecasting is sufficiently accurate for the Commission to implement a regulatory mechanism that provides incentives for Transpower around its operating expenditure.

Two options are set out in the Commission's Emerging Views paper. These are the within period model and the carry forward model. I would just be interested in the parties' views on each of those models. Starting with Transpower.

MR FLETCHER: I'll just start this. I think our view in terms of the efficiency incentive mechanism is that it should be predictable and simple to apply. Both of those methodologies that you propose, option 1 and 2, would satisfy that requirement. I think there's also the more overriding, from a good regulatory point of view, to make sure that the incentive is continuous. So it doesn't matter in what year of the regulatory period we make any savings.

The other point that we'd like to make is we think there should be an element of sharing of those benefits. And I think the option 2, therefore, which is a continuous efficiency carry-over mechanism, which allows retention of any over-spends or

under-spends for a set period, satisfies those requirements. So we'd be supporting option 2. Which I might add, for the benefit of others, is the mechanism which is applied in Australia under their framework.

MR SALMON: Just a comment on that is that I think mostly we agree with what Transpower said with regard to that. We'd prefer that it was a continuous type process improvement rather than set defined times when they're incentivised to make improvements. We obviously want to see some benefit from it ourselves. The one thing with regard to just the simplicity, that's something that I'm not very clear on at the moment and need to work through a little bit.

MR MATTHES: In terms of efficiency gains, that really should be taken as a business as usual approach to management. Certainly when you look at the large power companies that's all they ever do is look at continuous improvement. That means efficiency gains. When you're talking about incentives for even more efficiency gains I think you really have to apply that to superior outcomes.

So the message really is our expectation is that efficiency gains are a business as usual, no additional incremental benefit should accrue to Transpower and its shareholders. It's only superior performance that should get a gain. Having said that, I think the carry forward model is appropriate in that instance.

MR MELVILLE: Just with respect to the carry forward model, I'd be interested in any views on whether there should be any opex elements excluded from that model.

MR FLETCHER: I think the efficiency carry-over should relate to controllable costs only, so the pass-through costs. I think you'd need to review at the end of a period when you were assessing what the carry-over values were, whether there'd been any changes, for example, to accounting policies or capitalisation policies and make adjustments accordingly. But I think it should apply to those elements of our opex which are within our control.

MR MELVILLE: Did you have any specific examples about what should be excluded?

MR FLETCHER: Well obviously pass-throughs are excluded from that. I think importantly I think there needs to be sufficient flexibility that if there are changes to obligations or regulatory requirements on Transpower during the period then they're taken into account at the end of the period when any adjustments are determined.

MR MELVILLE: Any comment on that from other parties?

MR MATTHES: As long as we have symmetry on the consumer side, thanks.

MR MELVILLE: Just on the sharing of the efficiency gains, I'd be interested in views on what people believe would be a fair and effective ratio for sharing. So just to confirm the level of sharing will be defined by the length of the carry forward, carry-over period. In the Emerging Views paper we talked about having a carry-over period equal to the regulatory period, so if it's a five year period there'd be a five year carry forward. In Australia, they adopt that approach in Australia using a five year period.

MR FLETCHER: I think we support the Commission's position on this that the carry-over period should reflect the duration of the regulatory period, which I think the AER note that a carry-over over five year periods provides a benefit sharing ratio of 30 to the company and 70 to the customers. In other words if a saving is being made in year one of a regulatory period that's allowed to carry forward for five years, and then the operating expenditure is adjusted downwards so the customers thereafter get the benefit of that saving that was made.

MR MELVILLE: I just note that in one of MEUG's submissions to the Commission on Transpower it raised a concern about allowing Transpower to earn a margin representing efficiency gains. And the submission suggested that as this is a cost to consumers the Commission must ensure that the benefit will result in long-term superior performance compared to an efficient business, and noted that this benefit should be backed up with empirical evidence. I just wondered if MEUG would be able to answer now or in a post workshop submission what empirical evidence benchmarking MEUG proposed to be used.

MR MATTHES: I suppose that is a forward-looking guess isn't it really, as to if Transpower come up with a new idea which they think is better than any other transmission company in the world and they decide that they're going to go down that road. If it works then I think Transpower should be rewarded and we can measure that after the event. But I guess I was thinking about, yeah, how do you decide that beforehand. Certainly you can look at it after the event in terms of benchmarking against other transmission companies. Look I'll have to go back and think about that.

MR FLETCHER: I think it's important to - just looking at appendix C, the base operating expenditure against which any efficiency savings will be calculated will be subject to considerable scrutiny, and you'd hope the outcome of that would be a Determination from the Commission that that base level of operating expenditure represented a prudent level and a reasonable level of expenditure, which was benchmarked against other TNSPs.

I don't know if that answers your question Ralph.

MR MATTHES: I think that's, if you like, the conventional sort of best practice that the Regulator and Transpower can think of. The way I was looking at incentive mechanisms was really to apply to something novel and perhaps a bit risk taking. We expect Transpower to always be in the upper 10 or 5 percentile, that's just the way you're going to get reward for that. It's whether or not you can break into being the number 1 for the next decade, that's where you should have additional payments, but only in that case.

MR SIMPSON: I think the other thing to note in this regime is not just opex that will necessarily get you up there, you may well need to spend capex, so it's going to be a combination of initiatives to actually achieve some step gains.

MR MELVILLE: I'll just open up again to see if interested parties had any further comments on the opex approach or the opex incentive regime.

APPROACH FOR QUALITY STANDARDS

CHAIR: Do Commissioner Begg or Associate Commissioner Caygill? **[No comments]** No. All right, thank you, we're moving ahead of schedule. Perhaps we'll now go on to approach for quality standards, which is obviously scheduled before lunch but we'll do now. The Commission's Emerging Views and the approach for Transpower's quality standards are set out in the Commission's Emerging Views paper.

This workshop session on the approach for quality will consist of a presentation by Transpower followed by a discussion on the appropriate quality measures and the incentive mechanism that should be adopted. So could I please ask Marshall, I believe, who's going to present on behalf of Transpower. **[Copies distributed]**

MR CLARK: Thank you. Marshall Clark from Transpower. This presentation provides an overview of our proposals for the quality framework for the future quality regulation of Transpower.

Our proposal is put forward reflecting largely the scheme that's operating for transmission companies in Australia. We believe there's a need to move away from the current framework which is using aggregate system minutes as one of the main performance indicators of Transpower. We've spent a lot of time looking at the Australian systems, they're used by the Australian Energy Regulator for the transmission companies there.

Our proposal is based on the Australian scheme with some adjustment in some aspects. We believe that this framework would be suitable for the future and would allow us to move towards a quality framework that includes a financial incentive in a subsequent regulatory period.

So in developing our proposal we've first off reflected on the need to select measures that do reflect the most important performance issues experienced by customers. The other aspect of the scheme is that in the first stage we would propose that it is a monitoring scheme only, but we would expect that in a future regulatory period it would be linked to financial penalties and rewards. In the Australian model it is typically 1 percent of maximum allowed revenue at risk or for reward for the kinds of measures we're putting forward here. The Australian jurisdictions typically also have a market constraint mechanism, which we don't believe is appropriate for New Zealand, which is an additional 1 percent.

We propose that in accordance with the Australian system we would set targets for the future performance based on a representative historical period. But there is emerging practice in Australia to standardise on a five year period. However, when we look at the period ahead of us we may find that there are circumstances that would lead us to make changes to that forecast. A good example of this would be where we can see that the availability measure might be affected by the extent of new capital work on the network. If this new capital work is going to require substantial outages, that could affect overall aggregate availability and that needs to be taken into account, if the preceding five year period doesn't represent the same volume of work or has the same impact.

Moving to slide 4, the Australian scheme establishes bands of performance for various measures that limit the influence of that particular measure on the reward or penalty. I have an illustration of that and it's also similar to the illustration in the Commerce Commission's paper. These caps and collars around the targets don't necessarily need to be symmetrical, although they often are. Each measure is given an individual weighting that contributes to a total aggregate score.

And it's normal practice in the Australian jurisdictions that these are all up for renegotiation at the end of each regulatory period, taking into account the performance that's been experienced in that time. So here's a typical scheme that has been in place. This scheme shows a cap and a collar and a target. It also in the middle here shows a dead band. Now it's our observation that dead bands seem to be a decreasing feature of

the Australian scheme and we would propose that dead bands are probably an unnecessary complication and that it's difficult to establish the rationale and values for such dead bands.

The idea of the caps and collars is to set a limit that is the maximum reward or penalty and the experience in looking at the Australian jurisdictions indicates that these caps or collars are set at quite extreme positions that would not normally be expected. So typically a one in 10, one in 20 year event may be required, or series of events might be required to take you to either the cap or collar.

Expressed in statistical terms sometimes these caps and collars have been set around two standard deviations. I'll go into that a little more. So the measures to be established then in the Australian scheme are what's in the basket of measures, typically they have network availability. Now they've expressed this usually in terms of limited categories of equipment. So it's the availability of the transmission circuits and in some cases that they've included the availability of transformer branches and sometimes other equipment. So there is a question of what's actually being measured in terms of system availability.

They then have a parameter which is about the frequency of loss of supply events. And typically these are in two brackets, I'll talk about that more shortly. The Australian system also has average outage duration.

I'll make a point here that terminology and definitions are very important and we recognise strongly that in the next phase there is a clear set of definitions is established so that everyone is quite clear about what we mean when we use the words 'interruption', 'loss of supply event' and 'outage'. In our definitions an outage is the forced or fault unavailability of a branch of the network, it's not necessarily an interruption. So when we talk about an outage duration that's just simply the period of time that a branch was removed from service by a forced outage or a fault.

Once we've established the basket of measures we then need to go and establish the parameters for each measure, targets. As I've said they may include a dead band in the Australian scheme but they seem to be no longer a common feature. The caps and collars have to be established and the weighting for each measure.

If we look at the measures that have been used across the Tasman, system availability is commonly or universally used. The strength of that measure it does represent, as we've discussed earlier this morning, the period of risk exposure, security

risk exposure for consumers.

There is a possible downside of perverse incentives that a very strong incentive on the network company to maximise system availability could lead them to defer maintenance or avoid maintenance that removes branches from service but that in time carries a significant risk if you under-maintain the grid. However, that should be able to be managed with care in setting the targets caps and collars.

The loss of supply event frequency is another standard measure. It's obviously directly related to the experience of customers when the lights go out. It's very highly visible. The weakness is that our network suffers events that are very sporadic and are stochastic from a statistical point of view, and so there are some difficulties in getting on top of the statistics and trying to form a view about how to predict future performance.

Average outage duration, that is the typical time it takes to restore a branch that's been removed from service by a forced decision or a fault, the strength of that is it measures our responsiveness. But it can be skewed by certain events. For example, the major failure of a large power transformer can be a relatively long outage, and so a single event can create quite a bit of disturbance to the data.

If we then move on to some observations about the scheme, we see that in the publications by the AER that there's quite a degree of variability between jurisdictions. We observe that this is because they wanted to base the measurement regime on the previous year's information from that transmission company, and in some cases the definitions and the measures that they've used over time have varied a little bit. So the AER publications include in fact a unique set of definitions for each transmission company.

So these major parameters, there's a specific definition which may vary a little bit between the transmission companies. And certainly the targets, caps and collars, are all uniquely calculated to take into account unique circumstances involving the design of the network and the environment in which it operates.

And finally, we observe that as these targets, caps and collars are proposed as part of the revenue reset mechanism that they're premised on the basis that the proposed expenditures, both capex and opex, will be approved.

So going to what we've proposed, we've proposed to model it on the Australian standard measures with the exception of the average outage duration, and I'll speak about that on the next slide. So we propose that the loss of supply event frequency parameter

should be broken down into two segments. The first measures the number of events that are over a relatively small threshold of 0.05 system minutes.

So for those who are unclear with system minutes and what that means, we often use an example to say that one system minute is approximately the energy that would be not delivered if we had an interruption of all of Hamilton for about 40 minutes at dinner time in winter. So that's a substantial inconvenience to a large number of people, one system minute.

So a 0.05 system minute is a relatively short interruption, or an interruption of relatively small impact. So the proposal is to count and have a target and caps and collars for the measure being the number of events greater than 0.05 system minutes. We also propose to have a target caps and collars for the number of major events being more than one system minute.

The next set of measures will be on availability. We propose to break this down into just two elements; the availability of AC transmission line circuits and the availability of the HVDC link as an integrated entity. So these measures map quite closely to the Australian system. And we currently are using all those four measures internally, so we have experience in reporting and analysing and understanding those measures.

So if we go on to the next slide where I've talked about our proposal that average outage duration should be excluded, while we have records of the average duration of forced and fault outages of network branches, we haven't traditionally used these as a key performance indicator. We currently have no experience in detailed analysis of average outage duration, and so this makes it more problematic for us to establish targets, caps and collars.

We also are aware that some recent changes in risk management stance and changes in safety practises have had an effect on average responsiveness. For example, we have recently changed the processes that govern the permissions that our regional operating staff have to restore circuits once they've tripped. Some of you may recall that we had a serious event in Auckland not too long ago where a conductor joint failed and the 220 kV conductor dropped over more than 20 properties and across a public road.

You can understand that these are potentially extremely hazardous events for the public. We have in the past had regional operators have authority to reclose circuits manually based on a range of factors, but relying on their judgment in the heat of the

moment taking those factors into account. But we've had a change of practice which is somewhat more conservative and requires more evidence and more assurance that it is indeed safe to manually reclose the circuit.

Now this naturally means that circuit events where there's been a tripping will typically take a little longer to reclose because our new safety processes will take a little longer to go through. Also given that we're dealing here with the response to unexpected events, they can occur in substations as well, and we have over the past few years been striving to improve the safety performance of our substation workers. We are wanting them to take a little more time to reflect on the circumstance that face them when they turn up at site and not to rush in and to put themselves at risk.

Our safety performance from the past has not been satisfactory and we do require improvement. So insisting on people taking a little more care and a more careful planned and cautious approach to work will have some effect on the restoration of circuits following trippings.

So we believe that there will be some effect on this measure from changes we've recently put in place and it's not straightforward to forecast that effect on the future target. So what we propose is that we will be daylighting and exposing average outage duration as a measure with immediate effect. We will certainly be reporting it in our routine public reports on quality performance, and we propose that this would be suitable for inclusion in the future in the basket of measures, but we think that for the initial roll-out of the framework we would struggle to establish reasonable targets, caps and collars.

So to implement the framework, the work that's ahead of us is, as I've indicated, to propose definitions both to make sure that we're absolutely clear on the language and what we mean when we use terms such as outage, interruption, and availability. We would need to disclose and propose a methodology for how we set targets, caps and collars. We have work that's well advanced on that that follows what's been done in Australia.

I would point out that there's been a great deal of work done in Australia over the years in terms of how to set targets, caps and collars, and there is a pattern emerging, and we would attempt to make our proposals follow that as far as reasonably possible. We need to agree on the period of historical data that's going to be used to set the targets caps and collars, and on any exceptions or event caps.

The Australian jurisdictions often allow what we might call special pleading for

certain extreme events, bush fires or exceptional storms. We need to decide the extent to which we want to have force majeure events taken into account or some process for special pleadings.

Our initial view is that our historical data includes a number of quite extreme events and that we may be able to allow the use of that historical data unadjusted and without too many force majeure events, but that is a matter that needs to be resolved.

And finally we need to resolve the weighting of each measure. We currently have a view that the loss of event frequency being the most immediate and serious impact on customers should have the highest weighting. So our proposal is that following this workshop we'd be ready to make submissions on those proposals and the implementation details and submit those for consideration. That's my last slide.

CHAIR: Before we go and discuss the proposed key measures, do Commissioners have any questions about that statement?

MS BEGG: Just a question on the degree of disaggregation of the measures. Obviously you're proposing quite a high level, I just wondered if you'd given any thoughts to the benefits versus the costs of a more detailed break-down of the components of the target that make up your proposal.

MR CLARK: The data recording systems that underpin this include every forced and planned removal from service of every element in the network, so the potential exists to disaggregate them because it's built bottom-up by an ongoing process. The question then as to whether that's going to be useful if we were to set a target for the availability performance of 110 kV circuit breakers, for example, internally yes. For the engineering groups it's entirely appropriate that if we have, as we do, have concerns about the performance of 110 kV circuit breakers that they should be working towards trying to get the performance back in line with international norms.

The question is whether it's useful for stake-holders and for the Commission to have us bring that level of detail into the public domain and have that form the basis of the incentive. I think our view at the moment is that while we could do that it explodes the amount of detail quite quickly and would be somewhat difficult for stake-holders to grasp quickly, and to understand what is the materiality for me that Transpower's 110 kV circuit breaker performance is a bit below target this year.

MR STRANGE: And we've had some experience with this in previous slides. I think simple and aggregated is personally best. If the Commissioner's lights go out you don't really

care whether it was a circuit breaker or a line falling down or we hadn't trimmed the trees; your lights are out.

We do use this for our performance pay internally and have done for a few years now. So everybody - most of the staff have an element of their salary at risk. And it might be, I think, four events, we're only allowed four events over one system minute in a year. They all understand it, they all watch it and when we have an event, like a couple of weeks ago with a fire on a farmer's property, they all come to work saying "we just lost one". So it's simple, they track it, and it measures exactly what's happening with customers. So my personal counsel would be keep it that way.

MR SIMPSON: I think the other point to note is the detailed aggregation is actually published in our quality report. So it's available, not necessarily with targets, but there's a lot of detail available in the public domain in that area.

CHAIR: David.

MR CAYGILL: Just a couple of questions. Not necessarily now but maybe in a written response I'd be interested in a little detail around what the Australians are doing in terms of a market constraint mechanism. Not wanting to get into the - well, I probably am wanting to get into the pros and cons of it but not necessarily now, it would help me understand what that encompasses, so if we just flag that for now.

Can you, taking you back to slide 6, just so that I'm sure I understand, what is an outage that isn't necessarily an interruption, or what's an interruption that isn't necessarily an outage?

MR CLARK: Thank you. It reinforces the point of how valuable it would be to have a set of accepted standard and understood definitions. Interruption is the loss of service. So it's normally we're talking about loss of service to an off-take customer, so interruptions are expressed in unserved energy in system minutes.

However, we also track, record and report interruptions to generators. The statistics on those appear in our annual quality performance report. But normally when we use the word 'interruptions' we're thinking of interruptions of the service of delivering energy to customers measured in system minutes. An 'outage' is the planned or unplanned removal from service of a network branch. So we take an outage on a transformer to maintain it. But if it's in a redundant design arrangement that outage of the transformer has no impact on the customer at all, other than the risk exposure that we spoke about previously.

So in our terms, and this is a standard in the Australian jurisdictions as well and around the world in our industry, an outage isn't actually a loss of supply unless it applies to a single circuit line, or you've been in this unfortunate circumstance where you had another branch already out and a forced outage of the remaining branch. So an outage is just a removal from service, planned or unplanned, of a network branch, not necessarily an interruption.

MR CAYGILL: So if I follow - I think I follow that, but are you suggesting that the Commission - you'd be reporting to the Commission and we would be measuring you and penalising you potentially or rewarding you, based on your performance in respect of planned outages?

MR CLARK: No, only unplanned.

MR CAYGILL: Right. So average outage duration would be unplanned outages?

MR CLARK: We should have expressed it perhaps as average unplanned outage duration.

MR CAYGILL: That's fine.

MR CLARK: So it becomes a measure of our responsiveness.

MR CAYGILL: Yeah. Well, yes, but also a measure of your impact on the system.

MR CLARK: In terms of the risk exposure while that event is unresolved.

MR CAYGILL: As distinct from the impact on end-users.

MR CLARK: Yes.

MR CAYGILL: Okay. Then the last question just related to the idea that we shouldn't, at this point, include an average outage duration measure in the incentives themselves. I've got the point that you're comfortable measuring that and considering it later. It just occurred to me, and I want to check that I'm not misunderstanding here, wouldn't there be some relationship between system availability which you're suggesting you should track and we should include, and average duration?

I appreciate they're not the same, average duration is looking at the length of a series of events. But wouldn't we get some impact of potential risk to end-users if we nevertheless follow and incentivise you around system availability?

MR CLARK: Mr Chairman, I'd like to invite Mary Therese Sullivan to come and speak about the contribution of unplanned outages towards system unavailability.

CHAIR: Yes please, the microphone's there. Come and sit at the table if you like.

MS SULLIVAN: Availability does contain an element of unplanned outages, but the major factor that drives it is planned outages. You would find that if your availability was

something like 98 percent, probably 96, 97 percent of that even would be as a result of planned outages; because they tend to be quite long, because you need to do work over several days at times. So the duration of unplanned outages is included in availability but it's a small component of it. So yes, you will get some impact, but it's far outweighed by the planned outages.

MR CAYGILL: That's very clear, thank you.

CHAIR: Commission staff, do they have any questions?

MR MELVILLE: Yes, the Commission is required under the current wording of the Commerce Act to give effect to the quality standards set by the Electricity Commission. While the Electricity Industry Bill currently being consulted on proposes a change to the wording of that provision, it's still likely that the Commission will be required to take account of the electricity quality standards in some way.

The Electricity Commission sets a range of quality dimensions, and in the absence of any relevant statutory definitions of quality standards set by the Electricity Commission the Commission would just be interested in Transpower or other parties' views on whether the proposed quality dimensions give effect to the quality standards set by the Electricity Commission.

MR FLETCHER: We concur with the Commission's interpretation as set out in its emerging view, that the aggregate system - loss of supply event frequency and system availability do give effect to the Electricity Commission's requirements under the interconnection rules and the benchmark agreements. I'm not sure whether or not, Mary Therese, you might want to comment on the average outage duration.

MS SULLIVAN: In my view the average outage duration is outside of what we currently report to the Commerce Commission. That is related to availability, where there is an element of unplanned but it is small. But we normally count availability based on the duration of outages over the number of elements.

And there is also the loss of supply which although we don't do it - we report both numbers of losses and we report megawatt minutes of outages. So the loss of supply element is very similar to both, but there is nothing in the current Commerce Commission, electricity reporting, which is along the same lines as average outage duration. Although there are elements of it in availability.

MR FLETCHER: But just to go on from that, I think the wording as it currently stands is 'give effect to', and that probably is our interpretation in that regard. But if, I think, take

account of if it wasn't meant to take account of then I think it would include those measures.

MR MELVILLE: Do the other parties have any comment on that?

MR SALMON: Yeah, one of the things that concerns Meridian and has for some time is the lack of an economic type measure in there. We understand that it's difficult to come up with a measure, but there's a feeling that there's some customer groups that essentially don't have a measure that helps them ensure that Transpower's providing a quality service with regard to them.

And for instance I know the idea of doing a constraint type one in New Zealand, because the way the market works is somewhat different, but for instance I wonder whether a capacity measurement might help get some way towards that where it kind of creates a situation where you - and I have to admit here I'm specifically talking about the HVDC - but incentives to maximise the capacity of some key critical assets.

You can sometimes identify them because they're the ones that create constraints. The actual market outcomes that result from that to a certain extent are a little bit outside Transpower's control, but the capacity that caused that constraint is potentially something that is within their control. So that's one aspect.

Also I don't see anything here to necessarily stop kind of excessive maintenance, or something along those lines, as a way of managing, I don't know, risk or something along those lines as well. So it's all well and good to talk about the quality side of unplanned interruptions, but there needs to be a balance too that there are some critical assets where having service type levels around what level of maintenance can be planned for and managed becomes a critical point as well.

The other thing, I noted that there was talk about safety as being a key driver in some of these things. I wonder if maybe safety could be part of a measurement process if that is a key outcome. That's just an idea that occurred to me now.

MR MELVILLE: In the Transpower submission there was limited discussion on a measure of just total interruptions. I know there's a lot of discussion around average unplanned outage duration. The Commission identified total interruptions in its list of quality dimensions. I just would be interested in views on the pros and cons of total interruptions measure.

MR CLARK: It's interesting to note that it has been excluded in Australia from the basket of measures, and we propose that it should be excluded here as well. The trouble with

aggregate system minutes is that one single event can create an extremely large and disproportionate impact on the measure. And especially if we stick with the current process of having very few exceptions, exclusions and taking on the chin force majeure events, we think that the trade-off of that is that you score based on the number of event and not the aggregate system minutes of their impact.

It's also worth noting that sometimes the extent of system minutes incurred following a failure of a Transpower branch can be dramatically affected by factors that are only somewhat under Transpower's control. The configuration of the customer's network, the design of the customer's network, can all have some impact on the extent of unserved energy that occurs immediately there's a Transpower failure or in the process of restoring supply.

At the moment our means of keeping score are quite transparent, well we can make them quite transparent, we try to reflect as far as we can the total unserved energy. But we often have noted in some of our previous reports that the extent of the unserved energy wasn't entirely attributable to Transpower. But we felt it was better to report those numbers as we measured them rather than do some kind of adjustment that might seem to be not as transparent.

So I think there's a lot of disadvantage in using the aggregate system minutes measure, and that's why it's been excluded from the AER scheme and why we propose it be excluded here.

MR FLETCHER: I think just to add to that we would continue to propose to report that measure, but I think what we're talking about here is what measures we link directly to the revenue and the incentive framework.

MR CLARK: Thanks.

MR MATTHES: Can I just make a comment on that proposal. The total interruptions is an important factor for consumers, it's sort of a headline statistic that's easy to track. I wouldn't entirely exclude it from this part of the regime at the moment. There could be ways around it such as having quite a large dead band on it. That's my sort of initial view at this stage.

MR STRANGE: I think you've got it there indirectly by, you know, the four over a certain size which is what we use internally, KPIs. But the problem you'll get into is sort of major events like severe storms and things. You start having the sort of force majeure events which you'll have to put in and then it becomes very arbitrary. And where do you draw

the line? When you have a major storm how major was the storm, isn't transmission companies supposed to cut trees so that the storm, you know, it's one of our jobs to keep it on.

So it becomes a very arbitrary sort of measure. Whereas I think the ones proposed are pretty simple, doesn't stop us reporting on all the rest, ones we can keep pretty straightforward and measurable. That's just a view.

MR CAYGILL: Can I pose a question generally but I'd be interested in MEUG's response. I wonder whether it's worth thinking about two categories here. The categories of measures which are reported on and used in an incentive mechanism, but a second category of measures that are, for the moment at least, merely reported on. So Transpower indicated they would still plan to report on total system minutes, MEUG make the comment that that's of interest to customers and that makes perfect sense, it's an easy thing for them to follow. It may not, on the other hand, be well suited to being an incentive base, but not something that we should abandon altogether as a measure.

In that vein I'd be interested, not necessarily right now for discussion, but would it be useful to think in terms of some kind of capacity constraint measure as something we should start monitoring, possibly with a view down the track to using it as an incentive mechanism, but at least let's get some data that we can get some familiarity with so that it's out there, we're known to be monitoring it, and we can explore whether it's a useful further incentive mechanism or better than some of the others we're using, rather than just leaping in and saying let's design something we're not quite sure we've got a handle around what it is.

MR STRANGE: Yeah, we can take that on board. I'd have to sort to refer to Kieran a bit. I expect the TSO had ability to measure some of those things. But yeah, we'll take that on board, it's a helpful suggestion, and revert to you.

MR MELVILLE: Just with respect to system availability, I may have missed it, but was that unplanned and planned?

MR CLARK: That's correct.

MR MELVILLE: With respect to the average outage duration you talked about using that, monitoring it and using it going forward. Did you have a timeframe for that? Were you thinking about RCP1 and implementing an RCP2?

MR CLARK: That's our proposal. We would commence internally reporting it immediately, that it would be reported in the next quality performance report for the current

financial year ending in June. So it would become public then, and we would begin the process of understanding it, analysing trends, and we would provide those reports through the first regulatory period and then be open to proposed target caps and collars for inclusion in a financial incentive scheme for the subsequent period.

MR MELVILLE: You talked about potentially doing away with dead bands. Did you have anything further to add to that? Because I think in Australia they use a range of them; some of the measures have dead bands some of them don't.

MR CLARK: Our understanding is that the, shall we say the popularity of dead bands is declining, they're less commonly used, and we think they'll disappear entirely. In reflecting on setting of targets, caps and collars, there's quite a lot of complexity in those alone before you get to the trying to figure out some rationale that's consistent for applying a dead band. We think that the scheme should be designed to smooth out unders and overs over a period of time, and there is a basket of measures anyway.

Given the difficulty of trying to define a consistent process for a dead band, we think it's better to go for a simpler scheme that eliminates them. That's obviously the Australians must have come to the same view, that it's too difficult to establish a clear consistent rationale for how to even set such a thing. And that the sliding scale, if it's continuous, has the unders and overs - creates kind of a wash-up effect over the years of the regulatory period anyway.

MR FLETCHER: Doesn't it depend, Marshall, on what your definition, what you're including and excluding within the measure, which goes back to your point earlier?

MR CLARK: There is some connection with how you define the measure to start with, I agree. But it's an added layer of complexity and you have to ask whether the added complexity is worthwhile.

MR SALMON: I've got a question with regard to that. What sort of history of data do they have? Because one of the things that occurs to me is that until you've got enough of a history, having the dead band kind of acknowledges that there isn't a norm set, and maybe in time you would reduce the dead band as you got more experience of what a long-term history is.

MR CLARK: The history is not the only thing to take into account, and history can be misleading because of course our network changes over time and the loading on the network changes over time. So history is extremely useful, but a longer history is not necessarily better than a shorter history. It requires some judgment call.

And we can see the same thing obviously is applied in Australia, and I think although there's been arguments advanced that they should use a longer period for setting some of these parameters, it appears that the Regulator has settled on five years. I think it's for these reasons that the network and the utilisation of the network has changed and that going back beyond that there's questions about relevance.

MR SALMON: Is it a rolling five years that they use?

MR CLARK: They go back five years from - they take the last completed year's data and, you know, five years before that. So while in theory you could be informed by looking at longer periods, there's too much that's changed. If you go back - we've got more than 30 years worth of data but we wouldn't dream of using that old data to inform this because so much has changed over the period.

So I don't think that helps very much with this question of dead bands. We attack it at a - or consider it at a higher level. Is there a rational process for defining these dead bands, what are they for and is it even necessary, does it really help in terms of running the framework? And our view at the moment is no, it doesn't help, it just makes things more complicated, creates yet another thing that has to be settled off.

MS SULLIVAN: The one area I can see a use for dead bands is if, you know, you have a cyclic pattern, so, for example, there's always more maintenance in years 3 and 4 or 1 and 5 or whatever. So in that case you might put one in there. But for random events such as system minutes and so on, I can't see any particular value. But possibly there might be for maintenance, though not from what I've seen so far. But that's something we're still looking at.

CHAIR: Can I just remind participants this is not an adversarial process, that we are quite happy for questions to be asked but if you can please address them through the Chair first.

MR MELVILLE: I've got a question for other interested parties, particularly around the Transpower proposing that for the first regulatory period the revenue at risk will be set to zero effectively, so there won't be any revenue at risk or subject to the performance incentive regime. I just wanted to - interested in interested parties views on this, and whether they considered there should be some other alternative mechanism in place for the first regulatory period.

MR MATTHES: With a first read I think that's probably the pragmatic way to go forward. Encouraged by the way that Transpower are starting to think about other mechanisms. They've been sharing their KPIs with us for quite some time and what I've seen here today

is an advance on that too. But I think it's better to go slowly at this stage.

MR MELVILLE: Just on the diagram on slide 5, I just wanted to clarify that Transpower were expecting a profile like this to be set for each quality dimension and that each one of these would have a weighting and then that would be used to roll up to a total impact on revenue.

MR CLARK: That's correct.

MR SIM: I just have a quick question about - still on the average outage duration measure that you're proposing be excluded. I guess I would think that the impact - the average outage duration or a measure that looks at minutes would be something that's of great interest to consumers and energy users. So I'm just interested to tease out, or understand a bit better what your reasons were for excluding that.

And from slide 10 you've mentioned that you haven't traditionally used it as a measure, that you haven't got experience analysing the data and that you're not sure about what the effect on measures resulting from changes in safety practises would be. But you also mentioned when you're speaking to that slide that Transpower actually has all of the data there.

So I'm just interested to find out a bit more about why you think it's not an appropriate measure to use straight away, or why we couldn't do the analysis and put a measure in place, because that does show - I think that's a measure that consumers would be interested in.

MR STRANGE: Perhaps I can answer it Alex. The one of most importance to me is actually around both personnel and public safety. And we're definitely in the electricity system in New Zealand and in transmission moving from a bit of a can do attitude perhaps 10 years ago, 15 years ago, where you arrived at the substation, or if you're in a regional operating centre, and understand the joint breaks on a line or a bit of soot sits on the insulator, you know, they both take the line out. And we have an auto reclose quite often, and that tries. But then the operator's got to say what do I do? Do I reclose the line, i.e. put it in power again and if the line's broken it will just trip out again.

In the old days we would have tended, I think, to manually reclose and try and get the power back on. But you actually look at the impact and you talk about joint, you know, if we'd reclosed on, say, the container incident or something and the container's still parked against the line, you would probably have everybody standing within five yards of that vehicle dead.

And so we're going through quite - and we're also trying to change our staff culture or our contractor culture. So rather than coming in and throwing the first switch to try and get the lights back on they sit and deliberately think about safety and think about practice and go through and remove that sort of 'I'll just get it on, she'll be right' attitude. And we're going through that transition now. And I personally think for a period it will lengthen outage duration, most of them the customers will never see. After that you'll see a period of improvement, but I think most of the improvement will actually come from technology.

So I just don't think it's the appropriate time to put a driver financially on Transpower to be shortening an outage duration, because everything's culturally against where we should be going. But I would repeat I think in five or ten years, as we get more information about lines and remote access to substations with TNP etc, that will produce the step change in outage duration. But I'd be very very nervous about putting that driver financially on Transpower, in fact I'd be quite opposed to it for that safety reason.

MR SIM: Thank you.

MS WARD: Just one on disaggregation of measures we were talking about before, you didn't think there was a lot of value for stake-holders in doing that. I know in Australia they do, I think in some places, report on criticality of circuits, they separate it by, I think, system availability on that basis. I was just wondering, given that we're looking at customer impact, whether or not that would be a useful disaggregation to look at.

MR CLARK: There is - yes, there is that degree of disaggregation. Perhaps Mary Therese could talk about the diversity that we've observed and the ultimately forms of disaggregation of circuit availability.

MS SULLIVAN: In Australia they do have disaggregation on critical and non-critical equipment. They also use peak or non-peak period, sometimes they use other equipment, not just transmission lines but perhaps transformers, compensation equipment and so on. They seem to be tailored fairly much to the environment that the company's operating in. If, for example, they are delivering a lot of power from generators they may well go for critical and non-critical lines to address something like that because this is where another market participant is dependent.

In other cases if it's load related they may go for peak and non-peak because people don't want to take the risk at peak periods by having equipment out. So it seems to be very much dependent on the nature of the system. So yes - and in the first period I

think they had less disaggregation, that seems to have come in. Some who had good data put it in early on, but in other cases it seems to have developed over time. And there's now more disaggregation in their second round of regulation than there was in the first. Because some of them have only introduced some of those measures the second period.

So it is something we could presumably - if there was value in it we could look at it and move that way in future if there was seen to be some value.

MR CLARK: We should also observe that the other reporting arrangements on interconnection assets and connection assets do provide for customers quite an amount of detailed information. So if they have particular interest in circuits they can see the five year performance and the most recent year's performance reported under current arrangements that we're obliged to produce every year. So that disaggregation exists in certain aspects down to a very detailed level of individual circuits.

CHAIR: Any other questions? Perhaps we just reached -

MR FLETCHER: One other question, it's really in relation to the timetable and process. Is it the Commission's intention that any revised quality threshold would apply during the transition year, or would it apply during the three years thereafter?

MR SIM: I think our view at this stage that it would apply in the transition year.

MR FLETCHER: Okay, thanks.

CHAIR: Okay, have we reached all the questions of quality? We do have one more session with new investment agreements, but I talked to Transpower before, do the people who - staff would be available for that now or -

MR FLETCHER: We had a couple of staff who would like to attend that. Perhaps one suggestion would be maybe to leave it until tomorrow, I don't think it will necessarily be a particularly long item on the agenda. Obviously at your discretion.

CHAIR: Can we start earlier tomorrow then at 8.30 instead of 9 o'clock and we'll have it then, would that be okay? **[Nods of agreement]** Good, well, we'll start at 8.30 tomorrow rather than 9 o'clock, so we'll start with new investment agreements for the first half hour and then after that we'll be concentrating on capital expenditure. So we'll reconvene tomorrow, thank you.

Workshop adjourns at 12 noon to

Wednesday 3 March 2010 at 8.30 am