EMERGING TECHNOLOGIES WORKSHOP
DECEMBER 2015

MR RUSS: Welcome everyone, we'll kick this off. My name is Nick Russ from the Commerce Commission for those that don't know me, and we'll do introductions in a moment. But I'll firstly just go through some of the housekeeping that I'm required to say. **[Housekeeping]** So I'd just like to take this opportunity to welcome everyone to the Commerce Commission's workshop on emerging technology. We'll start off with just a few housekeeping matters, some of the practical details before I hand over to staff to go through the agenda. We'll also get everyone to quickly introduce themselves as well, just literally name and the business you work for, just for those that don't know each other.

So the first of a caveat of the day, we've got staff here from the Commerce Commission but there's no Commissioners. We'll obviously take part in the discussion, but nothing we say will reflect the Commission decision, it's really ultimately for the Commissioners further down the process. And I think it's a deliberate choice of the words calling it a workshop. It's really just to collectively test our thinking and really get to a common understanding about the current IMs in terms of how they deal with emerging technology and thinking about whether any changes are needed. And today it's actually a narrow subset of a conversation about emerging technology, it's what it means in terms of the regulatory treatment around costs and revenues.

We have cast the problem definition net relatively wide for this area and a lot of the issues that have come up in discussions to date or in the paper are really wider policy-type issues or areas to explore they aren't in our remit. But we do have representations here from MBIE and EA as well as the Smart Grid Forum as well. So I think those guys will be very interested in some of the views that come across today, because although not necessarily directly relevant for the decisions the Commerce Commission will be making, I'm sure they'll be very helpful for informing some of the policy debate.

In terms of where we are in the process, we're starting to get towards the pointy end. I think this is probably really timely discussion around particularly the cost allocations IMs to really understand if there are any problems or need to further explore any issues. Like I said, there's other areas of emerging tech that's being picked up in other work streams, but today is really primarily around what it means for those cost allocation IMs.

We published the paper back on 30 November. I hope people have -- I see most people have got it in front of them. I believe there's hard copies available if anyone would like a copy. I think the slides that Diego will be running through shortly really provide a bit of an overview of that paper and then move on to the scenarios which are some of the key aspects.

As we previously indicated, we will be producing a transcript of today's workshop. That's primarily designed for the people that aren't able to attend. We have limited numbers to try and focus on having more a workshop conversation-type environment. So there's a number of people that were keen to attend that weren't able to due to the numbers. So before we publish the transcript it will be circulated to everyone here to make sure there's nothing on it that is potentially unhelpful or would be better provided with some additional context, because there's always a risk for people reading the transcript that some of this stuff could be taken out of context, particularly in a workshop we're really about testing ideas and thinking.

I think unless people really want to make it clear that it represents the formal position of their organisation, please just take it more in the line of people putting out ideas and thinking to test rather than any formal position. It obviously will form part of the record, but I'd like to reiterate that the written submissions will be the things that we'll defer to in any -- if there's any difference of view. So no matter what's said today, people will have the opportunity to provide their final view on the topic as part of their formal submissions.

Please identify yourself before you speak just for people who are typing up the transcript. I'm not sure if this is a note to me or others but try not to talk over each other. I think that was for everyone. I think today we just really encourage people to just -- we really want to have an open robust discussion. It's pretty cheesy but there's no wrong answers here, we want to explore thinking -- we're trying to test scenarios, we need to be a bit more innovative, push the boat out about what plausibly could happen in the future. I think this is an appropriate environment to have that conversation.

Once we've received submissions we'll be coming back early in the new year to update on any changes to the process if we do see any further steps being required before we move to Draft Decision, which is scheduled for June next year.

So unless there's any questions or comments before -- just touching very quickly on the agenda; obviously this morning the guys that developed the paper will be running through a presentation -- it basically recaps on what we've published to date -- and run through some of the scenarios and the initial conclusions. Then we'll be breaking for lunch, then after lunch it's really more a stakeholder lead discussion. And I think we've got a few presentations, particularly from Contact and Powerco and MEUG are picking up some specific issues, and there'll be time for others as well for anyone else that's got some things they'd like to contribute to the development of the scenarios. Then we've got plenty of time for discussions and a bit of a chat afterwards as well. Hopefully we should get through all that comfortably in the time we have allotted.

So before we move on to Diego I just wouldn't mind if we could get everyone just to go very quickly around the room just name and the organisation you're representing today.

MR VILLALOBOS: Hello, I'm Diego Villalobos from the Commerce Commission, the Regulation Branch in the economics team.

DR GUNN: I'm Calum Gunn, I'm a Principal Advisor in the Regulation Branch of the Commerce Commission.

MR VERSTER: Ryno Verster, I look after the electricity asset strategy for Powerco.

MR STRONG: Nathan Strong from Unison.

MS BLYTHE: Gillian Blythe, Meridian Energy.

MR MATTHES: Ralph Matthes, MEUG.

MR WILSON: Nick Wilson, Mighty River Power.

MS CASEY: Anna Casey, Vector.

MR STEVENSON-WRIGHT: Jeremy Stevenson-Wright, Genesis Energy.

MR PARRY: Ross Parry, Transpower.

MR COATES: Glen Coates, Orion.

MR GREG SMITH: Greg Smith, Wellington Electricity.

MS TAYLOR: Lynne Taylor, PwC, I'm here on behalf of the ENA.

MR SPENCER: Todd Spencer, Contact.

MR RUSS: I haven't changed in the last five minutes, so we'll just go to the back row there.

MR WOOLLEY: Jason Woolley, Meridian Energy.

MR HEALY: Simon Healy, Contact.

MR GRANT SMITH: Grant Smith, Pioneer.

MS SHARPE: Susannah Sharpe from the Commission.

MR FLETCHER: Richard Fletcher, Powerco.

MR WILSON: Gareth Wilson, MBIE.

MR CAIN: Jeremy Cain, Transpower.

MR STEVENSON: Andrew Stevenson, Commerce Commission.

MS BEVIN: Jessica Bevin from Trustpower.

MR TIPPING: James Tipping, Trustpower.

MR NICHOLLS: Andy Nicholls, Chapman Tripp.

MR HANCOCK: John Hancock from the Smart Grid Forum.

MR TONER: Mark Toner, Webb Henderson, we're with Vector.

MR SHARP: Richard Sharp, Vector.

MR GROOT: John Groot, Commerce Commission.

MR EVANS: Craig Evans, Electricity Authority.

MS HOWELL: Vanessa Howell, Commerce Commission.

MR CARVELL: Alan Carvell, consulting for Mighty River Power.

MS CAIN: Rebekah Cain, Genesis Energy.

MS SMITH: Karen Smith, Commerce Commission.

MR RUSS: Excellent. I have gone electronic with our new devices so I'm not checking the cricket score if anyone's wondering, but if someone could keep an eye on the cricket that would be appreciated, looking at John Groot.

SPEAKER: You've got a TV behind you.

MR RUSS: Excellent, so unless there are any questions or comments I will hand over to Diego to run through the paper.

MR VILLALOBOS: Yeah, and I'll hand over to Calum.

DR GUNN: And I'll hand over to Ryno. **[Laughter]** Okay, thanks very much Diego and Nick. Hopefully everyone's had a chance to actually read through the staff workshop paper we put out. Don't really intend to go through that blow by blow at all. The key drafters of that are really the ones that will be the focus for discussions on that paper, and that's Diego and Susannah on the legal side.

What we'll briefly cover, just a bit of context for the whole emerging technology question, those of you who've seen the earlier parts of the process for the input methodologies review will be aware we put out an invitation for the problem definition earlier in the year, it was followed by an input methodologies forum, which many of you would have had the opportunity to come to, and emerging technology was very much one of the key themes that we had at that forum. And I think it was fair to say the feedback that we got after that forum was it was a really good opportunity to kick the process off. There was a lot of presentations, but we didn't really get a lot of discussion going and we didn't really bring it down to thinking about what are the actual changes we might actually make to the rules that we've got.

So we're very interested in defining the problems for the input methodologies review in a wider sense, then bringing them down to how Part 4 is relevant and then bringing them down to the actual changes we're focused on now as part of this process is changes to the input methodologies rules. But we are interested in stepping up to the problem in that wider sense and that's why one of the reasons, as Nick says, we've got Electricity Authority and MBIE here because it may be very well that in this particular area, emerging technologies, the problem definition steps beyond what we've got levers to have some control over within the input methodologies or Part 4, and may go further beyond into the wider policy space. But we're certainly interested in hearing all of those to make sure that we're focusing on the problem more widely.

So we'll just recap on what the objective of the workshop is, I'll do a very quick recap on just the regulatory regime and that's really a 5 minute overview because hopefully you're reasonably familiar. But just an opportunity to ask any questions at that point on the paper, if there was anything there that came as a surprise about the current approaches we've got perhaps, or some things where you've got particular questions.

At that point on the scope of regulation I'll hand over to Susannah to talk about some of the thinking we've done around the legal questions in this area, and particularly around the rather convoluted sets of definitions around electricity lines services, which is a rather interesting set of definitions that link to each other around different pieces of legislation. Then I'll hand over to Diego, and that's really the focus of the morning.

We'd really like to spend in discussions on the scenarios we put out in our working paper. Those weren't by any means meant to be exhaustive scenarios. They were very much intended just to test our thinking about how we approach these kinds of questions. So very interested in your feedback as to whether we got it wrong, whether we got it right, those kinds of things.

Diego will also talk about the cost allocation input methodology. That comes down to the next level of rules that's relevant. And although we've got questions there, this is absolutely meant to be a free for all discussion, particularly when we're talking around the legal provisions and the scenarios.

So just a recap on slide 3. As we noted in the paper, after hearing from people at the forum and getting submissions back from people after the input methodologies forum earlier in the year, it seems that the emerging technology area seems to be going into three sub-themes. And the two top ones are really about questions around risks and incentives more generally. So we're interested in continuing to progress on our problem definition thinking and on options in that area.

But when it came down to a number of submissions that suggested there were possibly problems with the existing rules that we've got, we really thought that needs a discussion for us to try and understand what the problem definition is around the way that revenues and costs are treated under the regime currently. So we thought bring it down from that wider question, actually focus on exactly what the rules currently are.

Some of the questions that were coming through in submissions at that point was really the first kind of area is are the rules future-proofed. All this uncertainty about where the technology might change and where the industry might evolve, are the input methodologies future-proofed enough until the next time when we get to a review. Of course we can do changes before the next review, but in terms of thinking about those are your big bang cycles of changes we're going through that cycle now, can we make any changes to try and future-proof until the next time we do them.

Then there was a theme around are the rules too prescriptive or are they too flexible. We were getting views that were quite different from different parties on that one. A question that was particularly being raised from those in the gentailer and retailer space was questions around how does all of this affect downstream markets and level playing field, and the fact that the service definition is straying into other areas. What's all these sorts of knock-on effects and questions around that. So those are the areas we're interested in exploring.

So the objective of the workshop itself; the first thing we wanted to understand is, is there a common understanding of how the rules currently work. Once we get that -- this is an opportunity to try and get that shared understanding, particularly given the rules aren't that prescriptive, so there's a lot of room for interpretation for particular things -- are there any changes that we can then make that would actually promote the outcomes of Part 4 better. So in going through that question at the high level, you've got this question of what revenues and what costs are out or in the regime. In terms of expenditure or in terms of income coming in, to what extent do they fit within the bounds of Part 4 or not.

And then for those things, those revenues and costs that do fall inside the regime, do all of those costs or revenues fall inside the regime, or a proportion of those to the extent that the revenues or costs are involved in not just the provision of the regulated service but in the provision of unregulated services, or even other regulated services as well.

In terms of putting out our problem definition paper, there were three criteria that we were saying that are a touchstone for us in thinking about changes to the input methodologies. Would the changes better promote the purpose of Part 4? Would changes better promote the purpose of input methodologies themselves, which is about promoting certainty about the rules of the game? And are there any changes we could make that would just reduce compliance costs and complexity of the way the regime fits together? So that's the lens that we're thinking of any changes that are potentially on the table.

As far as this workshop goes we're absolutely not here to answer all the questions. What we hope we will have done, as a result of this workshop and submissions that come through, is identify what all the questions actually are. You may well find in posing some questions to us that we'll actually have different views between us as staff, and it's quite likely, because some of this stuff is quite tricky. What we want to try and do is just flush out all of those questions and see your views when they come back in submissions too so that we're able to fully articulate what this problem definition is in this space.

So a very quick recap on how we regulate on slide 5. So it's about price quality regulation. It's not about regulating costs, it's about regulating prices and quality. Obviously to regulate prices we have to set rules about how costs and so on are treated, but ultimately it's a price quality regulation regime. So to do that, we've got two main sets of decisions that we do that underpin those decisions. The input methodology rules, which relate to the key financials; asset valuation, cost of capital, allocation of costs, treatment of regulatory tax, and through the actual price quality determinations that we set that apply to regulated suppliers.

In particular we're overall governed by section 52A which is the Purpose Statement, which I'm sure you're all aware is about promoting outcomes consistent with those that would occur in competitive markets for the long-term benefit of consumers. That touchstone in this area is quite an interesting one because the consumers referred to in the Purpose Statement are the consumers of the regulated services in particular. That's quite an important point for this question about emerging technology space, where you're obviously thinking about how the wider market works.

What we're directed to consider is the long-term benefit of the consumers of the regulated service. In terms of consumers, we tend to see that as being the acquirers of the service, whether that be directly or indirectly. So retailers are consumers of the lines service, end-use consumers are also consumers. So consumer isn't meaning end-use consumers, it's someone who effectively purchases the regulated service. So that's an important point to recognise.

So that's our key touchstone. There's also section 54Q, for those who are reasonably familiar with the regime, is the requirement on us to promote incentives for energy efficiency, demand-side management and reduction of energy losses, and to avoid disincentives for those things in the electricity area. That obviously touches on this emerging technology area. Another provision that we highlighted as being particularly relevant to our decisions in this area is 52T(3), which is a rather specific requirement and obligation on us which solely relates to our decisions in setting rules on cost allocation through our input methodology decisions.

That one requires us to not unduly deter incentives for investment in other regulated services or in unregulated services when we set rules about cost allocation. So that has quite a bearing on this area as well. So those are three of the key provisions that are really very important to any decisions we make in this area.

So in thinking about what the regulated prices may recover, obviously they recover costs that we think are legitimately incurred in the provision of the regulated service, but to the extent that we're guided by the overall Purpose Statement, that requirement to promote energy efficiency in demand-side management; there are also other things that we allow prices to recover as well. Potentially those are things like wash-ups of costs that have come from an earlier period, and also provision for financial incentives, rewards and penalties.

So it's not just a link between costs and prices, there are other things that go in there in terms of what regulated prices and revenues may recover. They may recover a financial incentive or they may be lower as a result of reflecting a financial penalty. So in that respect there's not just a direct link between costs and prices, there are other things that go into that decision-making process, and those decisions are guided very much by 52A, 54Q and in our input methodology decisions on cost allocation by 52T(3).

So the final slide there on the existing rules; when we first set the input methodologies back in 2010 there was quite a bit of debate about how prescriptive our rules ought to be about this question about what's in, what's out when it comes to revenues and costs. Particularly as to what might go into the regulatory asset base, given that's a really key component of regulated revenue, is the return on and return of the regulated assets.

At the time we decided to effectively rely on a concept for assets as to whether the asset was used to provide the regulated service and whether the operating costs were attributable to the provision of the regulated service. We decided not to be too prescriptive about what types of assets ought to go in there because we recognise it's not really a question of necessarily the innate function of the asset, it's how it's actually used in practice. That might be a mix of -- sometimes it's used in regulated activities, sometimes it's used in unregulated activities and sometimes it's used in both. Therefore it's quite hard to be prescriptive about a particular asset type as being in the regulated asset base or not because it depends on how it's used in practice. So that was the philosophy we used is, let's put very limited guidance in there, we'll just ask that question.

So the question for us now is whether that's sufficient moving into this new world of emerging technology where things might be getting a bit greyer. Perhaps we can address some of those questions about what's in and what's out through guidance outside the input methodologies, or perhaps there are some areas where it's appropriate to have a, for avoidance of doubt, this particular thing is in or this particular thing is out. That's a question we're asking industry.

So one of the few exceptions to that lack of specificity in the original input methodologies, for example, was load control relays. That was something beyond meter, we said that can go in, to the extent that it's employed in the use of the regulated service.

So beyond that what's in and what's out question, we then had the question about well, what proportion goes in. So we provide three different types of cost allocation approaches to provide reasonable flexibility to address that question, and Diego will talk a little bit more about that. So again, the question there is about prescription versus flexibility, are they flexible enough, are they too prescriptive or the other way around.

But it's worth noting there are no rules in the input methodologies about allocating revenue. So this was one of the things that occurred to us in thinking about this question, is whether, in going forward -- to date our understanding and observations is that prices are reasonably well attributable to the regulated service or the unregulated service. Costs are often shared but prices you can usually identify as being one or the other. But going forward, perhaps -- or even now possibly, there's more of a prospect of a bundled price that covers both unregulated and regulated services being provided. So that's a question we have for the industry; will business models move towards a situation where we have to think about how you split out prices and how you split out revenues from the regulated and unregulated service.

One quite detailed provision that we highlighted as a question was around the treatment of capital contributions. That's recognising that in regulated revenue not all of it comes through lines charges. One of the questions we had when setting the original IMs was how to deal with a volatility of income that comes from capital contributions. So because it was very difficult to forecast capital contributions, the approach we took was to effectively take it out of thinking about what the regulated revenue is and deal with capital contributions by netting them off the value of the regulated assets. It's a fairly narrow definition as to what those are.

So one of the questions we've got in this area is, is there other types of regulated income that will be generated in the future or being generated now, that is effectively falling outside the regime because it's not dealt with in lines charges and it's not dealt with in capital contributions and it effectively sits somewhere else; but its characteristics are such that you might want to deal with it through a capital contribution-type approach because it might be volatile, hard to predict and so on.

So the final slide that I've got, just to recap, is on 7. In our problem definition the input methodology is just one part of the question. So a lot of the decision comes down into how we apply those in our actual price-quality decisions. We've tried to balance flexibility and prescription but we're bouncing the question back to yourselves as to whether we've got that balance right, and really highlighting that point around the cost allocation input methodology because it is so potentially of particular interest for those who are operating in those downstream markets, is this requirement that we must not unduly deter investment by electricity distributors in the provision of other goods and services.

So are there any questions at this point on that part? We'll hand over to Susannah now on the legal questions, but just on that recap of key elements of the regime and key things to think about, are there any questions at this stage?

MR STEVENSON-WRIGHT: Just one question. You talked about how the Commission sees consumers, that's consumers of lines services. Does the Commission have a weighting aspect in terms of how they weigh those different types of consumer bodies? I mean do you have a weighting for a retailer versus the end-consumers underneath the retailer versus a direct consumer for a lines company service?

DR GUNN: To date we haven't done any weighting in that respect.

MR STEVENSON-WRIGHT: So the Commission sees them as all equal?

DR GUNN: I wouldn't say we see them as all equal.

MR STEVENSON-WRIGHT: Or just hasn't gone through the process yet?

DR GUNN: We haven't done anything that treats them differently with respect. So I mean one question that is often raised is the concern often raised by the regulated suppliers is that well, what does happen, to what extent is it the intermediate consumers, the retailers, who are potentially capturing the benefits from regulation that's not being passed on to the end-use consumers. And we basically see that as being dealt with with other parts of the Commerce Act and effectively the Electricity Authority's role around promoting competition in those markets. So we haven't really treated that question as being distinct to date.

MR STEVENSON-WRIGHT: Yeah, you can see why that question's quite relevant to today's discussion.

DR GUNN: Absolutely.

MR STEVENSON-WRIGHT: Because I mean in some ways that concept of regulated markets versus unregulated or competitive markets, that's what we're talking about here, that grey area in between. So it's quite an important thing to zone in on. Okay, I'm sure it will come out during the rest of the day.

MR RUSS: I suspect we're going to have ample time today, touch wood. What Calum just went through is pretty fundamental to how we think about the world and how we make our decisions. So it's a real opportunity now to say if anything -- concerns, it's not clear. We'll niggle at you for the rest of the discussions we have, because if you don't buy into this framework it's going to make it very difficult to engage on the rest of it. So it's not your last chance ever, but for today's discussion if anyone's got any observations or concerns or clarifications before we move on?

MS SHARPE: We also had the thought that if things come up that we can't deal with this morning we could park those, write them on a list and talk about them this afternoon, so there'll be time this afternoon.

MR MATTHES: Ralph Matthes. Just on your summary slide, number 7, the third point, I just want to make sure that I understand that Section 52T --

DR GUNN: 3, yeah.

MR MATTHES: -- 3, is actually trumped by Section 52A if in doubt.

MS SHARPE: I think that's correct, yeah. 52A prevails. It's the purpose of Part 4 and we interpret everything in light of that.

MR MATTHES: Thank you.

DR GUNN: Same with 54Q too really, I think we'd say.

MS SHARPE: Yeah, 52A is the primary provision. Everything needs to be consistent with that.

MR RUSS: When that was originally developed, Calum, the original IMs, was that much of a tension between that 52T(3) and the allocation? Did it actually drive any--

DR GUNN: No, I don't think so in practise. For those who are probably aware of the history, where that provision came from was because at that time that the legislation was going through there was a lot of interest from the electricity distributors being involved in the local fibre contracts, local fibre companies for ultra-fast broadband. So it came through those discussions with policy makers as to the potential engagement for electricity distributors in that telecommunications space. Obviously it's generic, it doesn't talk about any particular type of other services that the EDB might be involved in, because it touches on other regulated services too, not just unregulated services. That's where it came from.

MR SPENCER: Todd Spencer from Contact. So in the development of the current regulatory framework, was a specific thought given to how these quite complex multi-use, multi-function, multi-revenue technologies might fit within the framework?

DR GUNN: At that time I'd say not much, it would be fair to say, because very much the focus was getting the rules in place from basically a starting point of a blank sheet of paper. So with a statutory timeframe of two years there were debates going on all across the landscape in various areas. Of course there was a lot of focus on some of the big ticket dollar items, decisions about how you establish the initial regulatory asset base, questions around the cost of capital and so on.

MR SPENCER: Sure.

DR GUNN: As I mentioned, there was debate around this question around how much guidance to put around electricity lines services, what it means, what that means for what goes in the regulatory asset base and so on. Certainly PwC put a lot of thinking into it at that time and put submissions in. It was also looking at how you translate, because we were coming across from a previous information disclosure regime as well, it wasn't that the there was no regulatory regime in place, there was a long history of information disclosure for electricity distributors, and therefore a long history of how those companies had set up their internal accounting systems and everything else to capture information.

So that was quite an important consideration too in moving from the prior regime into Part 4, was thinking about the fact that there already is a regulatory regime there that requires capturing information in particular ways. So it was working in that transition from what was in the regulatory asset base to what goes in the new one under Part 4 was more of the concern, as opposed to the wider knock-on questions at that time.

MR RUSS: It's also worth noting just because it didn't, you know, people maybe didn't explicitly think about the potential for emerging technology, on the costs side it was definitely thought about how you deal with shared assets. So that's already captured, it's almost like the specifics are almost not that important, whether it's emerging tech or anything; if you've got an asset that's shared between unregulated and regulated, the regime has very much thought how to deal with that.

I think the point that Calum made earlier is what may be different with the technologies you're talking about is bundling on the revenue side. That seems to be an area was -- I guess the working assumption historically was that would be quite clean, it would be clearly one way or another and not require allocation. So on the asset side or cost side it was assumed there could always be shared assets. I think going forward there's the question about whether that's working effectively, but there's also a question on the revenue side, if the business models are likely to result in bundling, that potentially creates the need for some thought on the revenue side as well.

MR SPENCER: I think perhaps it's not only the revenue impact, it's also the fact that these emerging technologies exist in different markets than perhaps traditionally regulated assets. So it's probably the other key aspect I suspect.

DR GUNN: So I mean as I mentioned, really the main thinking at the time was to the extent the industry will evolve, that's a reason not to be too prescriptive at that point. So that was one of the reasons we resisted putting in a long list of these are assets that can go in and these are assets that can't. So in some ways I guess we're quite pleased we didn't put a list of prescriptive assets because we probably would have come unstuck.

MR SPENCER: I can understand it's perhaps wise not to get too prescriptive too early, but I guess we're seeing a fundamental shift in the nature of what's being dealt with. So it's not really a question of the prescriptiveness or otherwise of the definition of line function services, it's a question of what it was really intended to deal with. There's, I guess we would say, quite a fundamental shift.

DR GUNN: So we find that in fact greater prescription for those things that are clearly in and clearly out might possibly be helpful, whether that's either in the rules or just through guidance as a result of going through this exercise.

MR CAIN: But Calum, just to be clear, those issues were understood, obviously not in relation to the scenarios we're talking about here, but in relation to telecommunications for example.

DR GUNN: Yes.

MR CAIN: It was going to give the EDBs a cost advantage over, say, Chorus and that was understood, accepted and considered to be a good thing, that was what the Commerce Act was trying to provide. So it may be that there's a, you know, this thing has changed but it's not like they weren't considered and deemed to be a good thing. Is that right or have I --

DR GUNN: I think we had a provision that we had to demonstrate how we'd applied, and most of the specific thinking at that point in time in terms of, you know, scenarios and examples we'd being given were primarily around the thinking around telecommunications being a new emerging or infant area for businesses to get involved in. So at that time we had a look at all the types of unregulated things that electricity distributors were doing, and there was a very long list, and we've got a -- I think there's a table in the back of the input methodology reasons papers in one of the appendices, it lists some of the interesting things like knitwear manufacturing and so on going on.

To us it wasn't so much -- there was a lot of question about how specific we should be about the nature of the unregulated service that's being involved. Again, our approach was not to be prescriptive, it was to think about, the characteristics is either is it established and therefore can survive on its own as an unregulated service, or is it something that's not established in a new type of activity which, if we immediately required allocation of the costs to go back to the regulated service only partly, and the new emerging service -- whatever that might be -- had to bear some of those costs, then that might potentially unduly deter investment in that new activity.

So it was very much not so much what the actual type of technology or market that the investment might be involved in, it was more the characteristics of is it a new and nascent emerging type investment, or is it established, is what sat behind our thinking at that point in time. So it was generic not specific.

MR RUSS: I think that's what probably creates a big difference here, is these other markets are very closely intertwined, I guess, in terms of total energy delivered would probably be an important concept for consumers. I think the interplay between them is probably stronger than what the interplay would have been between electricity lines services and fibre in the past.

MR SPENCER: I think fibre's essentially another monopoly service, isn't it, whereas I guess the technologies that we're talking about here are clearly not of that nature. These are technologies which mums and dads can make investment decisions on.

MR GARETH WILSON: Could I make a comment here -- Gareth Wilson from MBIE -- that generation and load control have always been known to be services that play in both markets, if you like, and I think from Transpower's perspective. Maybe not so much in the Commerce Act regime but in the broader policy context there's been a long history of debate about how those services can be dealt with in both markets.

MR RUSS: Ross, did you have a point?

MR PARRY: I was going to say something that's been entirely been covered by you guys. It's not that it's new services in different markets, it's that it's services in markets that are bundled up with the end product that the consumers that are getting now from the electricity sector. It's probably more about the interplay of the markets and the closeness and how related they are rather than it's new markets per se.

DR GUNN: There wasn't very much discussion really about that downstream aspect of technology at that time. I mean it was recognised, though, that's why load control relays are one of the exceptions, it's recognising that's something that electricity distributors have been involved in for many years. It was making clear that that may go in the RAB, to the extent it's used, with controlling the regulated service.

MR RUSS: Did you have a comment Gillian?

MS BLYTHE: Yeah, I mean it was picking up on really what Ross and Gareth were saying. Transmission alternatives is where all the debate was in the generation side as to whether some things should be able to have revenues from the spot market at the same time as receiving it from Transpower. That was a hotly debated topic.

I guess one of the things I'd also say is that 52T(3) just sounds to me, when it was written it was thinking about the EDBs as being the small guys and the Choruses and anybody else being the big guys and making sure that they had the ability to compete. At least in the context of a battery that I might choose to put in my house I'm not the big guy, you know, the EDBs are the big guys, and so it's a different sort of flavour. And to the extent that I'm a battery supplier who wants to put it into Nathan's house, then my ability to compete with the EDBs, it sounds to me as though 52T does nothing for me whatsoever in terms of that level playing field. So I have to look at some other part of the Commerce Act to say what's the definition of the market for me to have reassurance that I have a level playing field. Is that what I'm hearing?

DR GUNN: I think they're saying that 52T(3) certainly does not direct us to thinking about a level playing field in those downstream markets. And because it's not specific about what those other activities might be it is completely generic, what you're saying might be right. But we have to take it based on the face of what it says.

MS BLYTHE: Totally agree.

DR GUNN: Yeah.

MS BLYTHE: Which is why I think it's really reassuring to have MBIE and the EA in the room.

DR GUNN: Exactly.

MS BLYTHE: Because if there is a wider issue with the regulatory regime we should think about that.

DR GUNN: Yeah.

MS BLYTHE: Because as a customer, the householder, I want to have a long-term benefit for me and as all as customers, and if we've got a quirk in the system that none of us anticipated we need to think about whether that's appropriate.

DR GUNN: Because you're absolutely right, I mean my personal understanding of the debate at the time was the context was very much the telecommunications space. As you say, the minnows taking on the Choruses, or Telecom at that stage. So at that stage in terms of interest in those provisions, it wasn't so much the retailers we were hearing from it was Telecom in terms of concerns about those provisions at the time.

MR RUSS: It is important when we talk about what is and isn't a level playing field, it's only in relation to the cost allocation methodology, which was primarily just about people accessing economies of scope and scale, because it's just how overheads or whatever could be allocated to -- it would be helpful when you say level playing field, is it more than just how their costs are allocated?

MS BLYTHE: Absolutely, so in my mind I would think about use-of-system agreements, if I'm a battery supplier, I'm going to have to have a use of system agreement with a distributor. Is it the same one that the distributor would give themselves? What's the important provision? If you go back to Part 6 when we developed the distributed generation regulations, that was about making sure I rock up to the distributor and say "I want to do something" and the person I'm talking to says "I need to tell the person in the next door room because what they want to do is going to be in competition with what the in-house businesses are doing".

So what are the rules around information, how quickly do you need to be able to go back and provide data maps, whatever the heck you want, you know, to provide information to the new entrant. Distribution pricing, you know, I am responding to the fact that there is a differential in prices at certain times of the day or night and I can do something with that to make my battery business work, and the distributor is saying "just a moment, I can change those because it's within my remit", and what's those sorts of relationships.

So in terms of contract, in terms of information, in terms of price; I'm sure there's other bits and pieces but those are -- so then if then I'm the distributor who can put some partial or total cost recovery into my RAB and if I can do it over whatever timeframe, I've got advantages relative to me who's the smaller battery supplier.

MR RUSS: I think that's important just to, you know, those other areas I think are very similar to the conversations in the early 2000s about the system operator at Transpower, about how much information they should get about the network versus generation assets and --

MS BLYTHE: Totally.

MR RUSS: -- and demand side management, I think it's very similar to that. But I think the

52T(3), it is very limited to the cost allocation thing. So I think when we're having a conversation about whether there is or isn't a level playing field it would be helpful if people identify whether they're primarily concerned with where 52T(3) takes you because of cost allocation, or whether you're more widely concerned about just the ability potentially of a distribution business to have an advantage in a market potentially legitimately -- there's no saying there's necessarily a problem -- it would be good to understand where people are coming from.

MS BLYTHE: But to the extent that they have an advantage, does that mean you need to amend how you think about the cost allocation to try and compensate?

MR RUSS: Yeah, so I think basically what you're saying is there might be already natural advantages that mean you don't need to do anything more over and above normal cost allocation before you consider that term and still conclude there isn't disincentives for people taking activities in other markets.

MS BLYTHE: Yeah, maybe.

MR CAIN: It might be helpful, Nick, to think about these in terms of things that are in within the scope of this review. Because I think when you introduced it, Calum, there's almost a filter and what we're really talking about here is quite narrow. I think there are a much broader range of issues that may be part of the scope of the Commerce Act or maybe the scope of the Electricity Act but aren't necessarily part of the debate today, and there could be more substantive quality of access type of stuff that you're talking about.

MR SPENCER: I guess it does illustrate a point, though, I think it's quite difficult to have a meaningful discussion around these issues without considering the issues more broadly, I think, to narrowly focus on cost allocation as severely undercutting the issue I think. You know, there's all sorts of asymmetry which, you know, we would say requires addressing; asymmetry of information, asymmetry of access, such that, you know, it makes for an unlevel playing field. So I think, you know, you do have to look at, to the extent we can today, and I think it's really useful that the EA and MBIE are here and other interested parties so that we can hopefully have a broader conversation.

DR GUNN: And certainly in submissions don't artificially narrow the submission down to what you think might be relevant to questions around cost allocation, I would start at that wider question again. Because we don't want to miss something potentially within the ambit of Part 4 by having that artificial narrowing in advance. Approach us with those concerns from that holistic approach and then we'll think about what levers do we have that actually, or what can we do, how are we constrained to address particular questions, what are we directed to look at, what are we not directed to look at.

MR SPENCER: Yeah, because I think the outcomes that you might -- if we just focus on input methodologies there, you know, you might design a perfect input methodology regime but I think it's very important that you look at other issues that are going on at the same time, for example, distribution pricing, because I think depending on where distribution pricing comes out may impact on where you end up on input methodologies. So all of this has to move in tandem to get the right outcomes.

MR PARRY: I was just going to say Gillian, Jeremy and Todd have been talking very much about -- are focused on the battery in the house, it would be useful to think about in terms of battery a little bit upstream and network as well.

MR SPENCER: Yeah I don't think it's only batteries as well, I guess our view is that if you take the sort of interpretation that the Commerce Commission has taken in its report, you know, I think that has all sorts of scope to go very deep into a house, I think it has scope to include heat pumps and chest freezers and all sorts of electricity-consuming devices which can effectively be utilised by a household to manage demand. So I think there's a lot of scope downstream, but I think we also do have a very, you know, I think the discussion needs to be also had around upstream assets as well because those can have quite an impact on how the rest of the industry operates.

MR RUSS: That's probably a good segue into what --

MR SPENCER: Sorry.

DR GUNN: No, no.

MS SHARPE: No, no, it's good.

MR RUSS: I do have one question first I guess is my gift here. The Smart Grid Forum, some of the conclusions you guys reached about how things evolve in New Zealand and a positive approach to a free market approach, did any concerns get raised about how free the market would be because of the potential information or other advantages you could perceive in a distribution business having in terms of the conversation about smart grids and smart networks?

MR HANCOCK: It's a good question, I mean for the people who don't follow every molecule of the work that we do, the forum was interested in whether -- we were asked by the Minister to look at whether there was a case for Government taking us in a leading role in co-ordinating the roll-out of smart grid technologies. And the way that the forum attacked this was to look at case studies of how ripple control infrastructure in New Zealand has been enhanced subsequent to the line/energy split and also to contrast the way in which smart meters have been rolled out in New Zealand versus overseas where generally there's been the death hand of Government on top of it.

And I think in both cases they're quite clean, Nick, and that's probably why these issues didn't come really come up. You know, ripple control, as you say, it's relatively easy to ring-fence, the costs and the revenues around that. So I think the participants were quite happy with the fact that it's not really contaminating any other markets, it was, you know, very much part of line function services and it was a question of whether that was the best thing for that line company to do at a particular point in time.

And New Zealand's in this extremely unusual situation where smart meters are very clean as well, you know, all (inaudible) useful outside the regime. So again it's quite tidy to see that, you know, the way in which those markets have evolved haven't been contaminated by cost allocation principles or any of the things we're talking about today.

But I think you make a very good point that where we get to these boundary issues, they are emergent. I mean, you know, the number of examples of these technologies being used where they play in both reticulation and energy markets is extremely small at the moment. So there aren't that many case studies, which is possibly why we didn't really go there.

MR RUSS: Thanks, that's very helpful.

MR NICHOLLS: I had one question for Calum. In one of your earlier big picture slides, Calum, you rightly pointed out that you regulate the price and quality and then you pointed to things like rewards and penalties, so you don't regulate costs you said, you regulate price and quality.

DR GUNN: Well we set rules for costs.

MR NICHOLLS: Yes, yes. Yeah, and you pointed to wash-ups and --

DR GUNN: It's a price quality regulation regime underpinned by rules about the treatment of costs.

MR NICHOLLS: Yeah, so that was my question I was wanting you to expand on that. Are you floating a real delinking between price and cost?

DR GUNN: No, I mean obviously there's a huge intersection, but it's recognising at the margins there's a wiggle room above and below that. So to give an extreme example, if we thought that a cost -- this is me just floating this off the top of my head, so I don't want to see this on the front of Energy News -- but I mean seriously, if we thought there was an asset that was employed in providing the regulated service, so it fell naturally within, I think you call it the limb 2/limb 1 question; your limb 1 question of is it used in providing the regulated service.

But we thought for some bizarre reason, whatever that reason might be, that allowing the business to recover the costs would somehow be inconsistent with 52A and therefore we ascribe the value of that asset and the regulated asset base zero, so the proportion question is zero per cent. That's the distinction between the two, is that it might naturally be in, but the proportion that goes in might then be zero, even though it's something that's used in the provision of the regulated service. So that's an extreme example of how you might apply the lever to your decisions around costs.

Then at the other end, to the extent that we think there are things going on say consistent with a promotion of 54Q and promoting demand-side management that perhaps don't naturally fit within what's captured normally in the RAB, but we think that it's consistent with 54Q to do something in that area and it's also consistent with 52A and not inconsistent with 52A, then you might deal with that through a financial incentive because we see that as a good thing to spend money on, or to have an incentive to do. So again it's not necessarily related to the costs of doing that activity, it might be related in practice how you work out the value of the financial incentive.

So the kind of area where we've got those is the most recent DPP reset where we had the energy efficiency and demand side management incentive provision, which is for revenue foregone in the provision of activities related to demand side management, for example. That's an example of putting a financial incentive on top of the costs bucket.

So don't see a non-alignment between prices and costs, it's just at the margins you've got the ability to change the level of costs that go in and to put other things in there as well. Does that make sense?

MR NICHOLLS: It certainly (inaudible). You went out of your way to make a point and I was interested in where that thinking went so that's really helpful to --

DR GUNN: Yeah, it's not where you naturally would think of starting from. But this was one of the things, in talking through this internally, where we realised actually we already have this slight decoupling between costs and prices, so it's just making clear some of those things are just lagged issues, like having wash-ups. So they're costs that are recognised but they're recognised at a different time. But then there are other things as well, financial incentives and penalties. So more recently the reset's also got quality incentive spend, so there's financial penalties and rewards around that, for example. So not directly related to costs.

MR RUSS: It's probably helpful to think on that continuum, you know, basically the regime here's internationally referred to as like performance based regulation, which is about creating incentives, and to achieve those incentives you have to do the sorts of things that Calum's talking about. If you converge the costs and revenues being equal then you're converging to effectively rate of return regulation. So it's just on that continuum about where you sit.

DR GUNN: Yeah, so just because it naturally fits the definition of regulated service, you still have to ask yourself the wider, what are you trying to achieve with the regime questions that your 52A, your 54Q, your 52T(3) are the lens you look through and think do you just have the direct link between costs and prices or is there something else that affects that?

MR RUSS: Calum identified, you know, an extreme scenario, but in some ways a lot of other regulators, if you have a used and useful test on capex -- which to a certain extent Transpower does in some of the major capex -- that's effectively that, is some sort of optimisation or write-down for any perceived inefficiencies means, you know, what they can recover versus what they spend can be decoupled to create incentives about making sure investment is efficient going forward.

MR GREG SMITH: Nick, I was going to say just probably an EDB perspective, in terms of initial summary, we look at this and go well, if we're going to put batteries or whatever into our network for the purpose of supply it's just another asset right, you know, whether it's old stuff or new stuff, it's going into our network to manage the supply. So it seems pretty straightforward that that's how you would deal with that.

Where this debate seems to be going very quickly is this behind the meter discussion and that boundary with consumers. I think what would be interesting to explore through this is trying to understand what really is best for consumers, what the perceived competitive advantage people seem to be referring to that EDBs may get by having batteries in the home as part of the regulated asset base, when you think about it also being a competitive market in that anybody can still sell a consumer a battery regardless of whether EDBs are regulated or not.

I think that's really where we seem to be drawing the line quite quickly. It's pretty clear it's on the EDB network we're going to use these assets to be as efficient as we can and we're going to get regulated for it. It's that other stuff that we need to look at, I think, and focus also on the consumers.

And to wrap up a couple of key points that were made, it does need both the EA and the Commerce Commission ultimately, you know, and it's good to have both parties here because there is a cross-regulated solution in mind when you think about pricing in the future as well.

MR RUSS: So you've given me an even better segue now into Susannah's stuff. That's exactly where we get to, I think, the scenarios bear that out to a certain extent. So it's probably a good time to pick up the discussion about the boundary and what it means and how we've got there.

MS SHARPE: Thanks Nick. So I'm Susannah Sharpe, I'm a Senior Legal Counsel at the Commerce Commission, and I'm going to start to cover -- although I think we've already started to discuss -- this question of what can be considered within the scope of the regulated service. So if you've got a slide pack in front of you, that starts on page 9.

What I'm going to cover was raised in the workshop paper that we published prior to today on pages 15 and 16. I'm just going to try and keep it at a relatively high level. I'm conscious that we've already started to discuss these things. So what I'd like to do is in order to look at this question of scope, just take you through some pictures. It's a bit ambitious in terms of trying to explain a relatively legal question in pictures, but I will try.

So what we're looking at is the scope of regulation for electricity lines services as it's defined in Part 4 of the Commerce Act, and then the aim with this is then applying what we've tried to explain about the scope of regulation, this first question, how do we look at that in terms of the scenario discussion that Diego's going to start following my bit.

The key question is, is it part of the regulated or unregulated service. And I'd like to be able to identify any questions that you have as well. What we've put forward is one view and we're aware that others -- as has been expressed already today -- may have a different view and either raise that today or in your submissions after the workshop.

So if you look at the first picture on slide 10, the first way of looking at this question of scope is to look at the definition of electricity lines services in section 54C of Part 4. And what it refers to is conveyance of electricity by line. The words "by line" then take you into definitions in the Electricity Act. "Line" is defined, which refers to works, which in turn refers to electrical installation. And some of you already today referred to the idea of point of supply or behind the meter, and that's in the "electrical installation" definition. So those are all Electricity Act definitions.

You can do quite a circle in those definitions for those of you that have explored them. And we did look at that and we think that it's not necessarily that helpful because it's quite a literal focus on the words. What we've done is taken a step back and look at the purpose of those words and principally the word "line" being cross-referred to in the Commerce Act and what that's trying to achieve.

We think that what it's trying to indicate is that when you're looking at what is the electricity lines service, it's defining the network. So simply the boundary of that picture there on slide 10 being the network, either the transmission or distribution network, is what "by line" is referring to. So once you've looked at that and you know that you're talking about -- by line you're talking about the network, there are also exclusions in section 54C, exclusions for generation and small scale networks, for example.

So then the next thing you move on to is the next picture on slide 11. The question that you need to ask once you know what you're talking about in terms of the lines, is what can be considered within the scope of that regulated service, the regulated service being the electricity lines service.

And we're taking the view that the physical connection isn't necessary. So for a relatively trite example, if you think about an office chair that an EDB might use for its office worker, that doesn't have to be close to the network, doesn't have to be physically connected. Similarly, the battery in this picture, to use an emerging technology example, whilst it's on the consumer's premise, if it is being used to support or provide the lines service we think that is fine, it doesn't need to be on the network. So that physical connection isn't necessary.

And then I think a way of summarising it are these questions that we posed on slide 12. So at the highest level the question that we think is useful to ask when you're trying to explain the scope of the regulated service, the question is, is what the supplier doing part of the service where the service is conveyance of electricity by line -- and by line we mean the network -- and then is it excluded by any of the exceptions -- as I said there are some exceptions for generation -- services that are subject to competition by other lines services, or EDBs, and small scale networks; and then when you get into the IMs, as Calum's already referred to this morning, you can get down to these questions of is the asset used to provide the regulated service, or is the cost attributable when you're talking about an activity rather than a physical asset.

So those are the two levels that we've looked at trying to describe or deal with this boundary question. I'm just going to pause at this point to see if there's any queries, because it's taken us a little while to come to this point, so you may want to test it before I think of a way of recapping.

MR PARRY: What's the "subject to competition from other lines services suppliers" intended to capture? Is that the edge of the network where there's --

MS SHARPE: If you look at slide 13 -- I didn't really want to take you all into the legal definitions, but under section 54C(2) there's a list of all the exceptions to the meaning of "electricity lines services", and the one I'm referring to there is subsection (e). But that is where there's competition between the lines services. What is it intended to capture is your question, Ross.

MR PARRY: Sounds like an area of the network where there's two networks coming in and meeting in the middle.

MR RUSS: Merchant transmission maybe.

MS SHARPE: If you think inherently Part 4 is only regulating those lines services that are lacking in competition, so I guess if there was two competing suppliers, to the extent that they're competing and the level of competition is great enough that that would be an exception, but I can't think of a real example.

MR PARRY: Somebody cherry-picking the EDB's network, roll back regulation.

MS SHARPE: Possibly, yeah. There are obviously scale issues here, like small scale is an exception as well.

MS CASEY: Is this maybe an example of where they wanted to make sure of that there were no -- that they had dotted all the Is and crossed all the Ts.

MS SHARPE: Possibly.

MS CASEY: And although there were no lines companies in competition at the moment --

MS SHARPE: There could be in future.

MS CASEY: In case there were in the future we'll just make sure there's a provision in there.

DR GUNN: Could be, there was very little discussion around any of these provisions when it went through select committee or explanatory note. I can't actually remember whether some of these were cut and pasted from other things that existed previously and brought across, if this was one of those or not.

MS SHARPE: Yeah. You can see in the definitions here there's quite a correlation to Electricity Act and Electricity Industry Act, so the separation of retail, generation and lines.

MR PARRY: I guess the key thing from looking at the definition there, other than what was in the bullet point before, it's about competition for provision of lines services, so it's not other services --

MS SHARPE: That's right, yeah.

DR GUNN: That's right.

MS SHARPE: That's the point, yeah.

DR GUNN: There was an analogy -- there was much more discussion around in the gas space around bypass supply. The way it was dealt with is a little bit different because you've got exemptions in the Act for particular pipelines, so virtually all of Nova's exempt, for example, because it was presumably seen by policy makers as being all bypassed. But that discussion, I just don't recall there being much discussion on this at the time at all.

MR RUSS: Sorry to put you on the spot, Gareth, do you have any --

DR GUNN: Do you remember?

MR RUSS: No, just taking -- not the specific question, but just what Susannah's just talked about, like in terms of getting to rather the strict literal interpretation and where we get to about it trying to define the network, are you comfortable with that, does it raise any concerns, or you're familiar with any debate that's been had around that?

MR GARETH WILSON: No, I don't recall any and I'm comfortable with it, but I don't have any recollection about why, for example, that competition exclusion is there.

MR RUSS: In terms of the road we've gone down for the purpose of this seems comfortable with what was desired to be intended.

MR SPENCER: I think perhaps the interpretation is the right one given the framework that you're working within. But I guess for my money it has a fairly perverse outcome in that simply because the technology has been utilised by the EDB ergo it is a line function service. So prior to it becoming part of the line function service it may well have been a technology that was available in a competitive market, a contestable market.

I guess the risk is, inadvertently, that by capturing it in the definition of line function services you're imposing a regulated regime upon that technology which has all sorts of unintended consequences. So I guess that approach does, I think, create a fairly perverse outcome because you've gone down a trail of essentially converting or a very strong risk of converting what should be a competitive service or technology into one that is regulated and as a result we would say less competitive.

MS CASEY: You can end up with equally perverse outcomes where you have an EDB who is looking at, you know, an option between putting a network battery or any network asset on to its network to improve reliability or, you know, as part of its network improvements. And an alternative there is to put batteries in customers' homes to use as that network improvement.

If you exclude them from doing that, you may end up with a scenario where you make the improvements on the network and then you also have those consumers investing in the batteries themselves, paying for it themselves, which could either mean that you've lost the efficiency, you've double paid, or you end up, if the consumers make those investments first before the EDB goes to make the improvement on the network, suddenly they don't have to any more, and it's those consumers who have met the cost of that network improvement. I think those are equally perverse outcomes as well.

MR SPENCER: Yeah, no, I agree, and I guess we're certainly not proposing that anyone be precluded from playing in these markets. It's just a question of the terms on which we're entitled to play in these markets.

MR RUSS: I guess it will come down to the scenarios that Diego will go into about the cost allocation, because it's only the first thing for it to be tested, it meets the service, how much regulatory protection you get from a -- you know, what that means in terms of the cost in revenues will depend on how much of it's allocated, how much of it's left effectively to be, I guess, allocated to what would be deemed unregulated business.

MR COATES: Glen Coates here. One of the things that's going through my mind is in a customer-led world the perfect efficiencies avoiding those issues that you've just described, is it actually still our problem to resolve.

MR SPENCER: I couldn't agree more, you know, I think --

MR COATES: People go and buy TV sets and we all buy different ones because that one's right for us. So those choices are likely to be happening in this industry going forward. So we have to think carefully about whether we're big brother or not and even if they're making bad decisions they are actually consumer decisions, it's what they want.

The other point I wanted to add was around this competition in the line services area. We do face developers wanting to build their own subdivision networks, and as part of that, because they're small, they're not owning too many, they have the ability to not meet the regulated requirements. So often they can provide a solution that wouldn't pass our test for reliability and security of supply, and the people that move into those subdivisions don't know what they're moving into until they move in there and see that poor performance. So there's that risk that if you don't regulate something that there is a service side risk as well.

MR RUSS: There's a bit of an informal queue going here, I think there's Allan, Mark, back here and Richard as well. So maybe --

MR GRANT SMITH: Grant Smith, Pioneer, thank you. Just a question, if those two definitions are considered part of the network, whether it's in the house or in the substation, would they be treated exactly the same in terms of how they're priced and allocated?

MS SHARPE: We were dealing with this first question which is about whether it's regulated or not, and just to recap with the battery example that people have been talking about, what we're saying is the location's not critical, but there still is this question of how are they using that battery. So to the extent that a supplier's not using it to support the network, it wouldn't be considered part of the regulated service. But if it was being used even in part, say for demand management or preventing a spend on other physical assets, then it could be considered. Even though it wasn't physically connected to the network, it may be considered part of the regulated service. Not sure if that answers your question, but the next question we get into is looking at the costs allocation.

MR GRANT SMITH: I'm just thinking functionally they do the same thing, so are they not being treated the same, exactly the same?

MS SHARPE: I guess we're saying it depends what they're being used for, or how they're being used.

MR RUSS: How the costs and revenues are apportioned. I think if you're saying if it's in different locations it could be, you know, what's its primary function and there might be some secondary benefits on how it compares. So that will just be an -- this is a question we'll come on to later -- in terms of how the distribution business applies the rules in terms of allocating -- under the existing rules how those costs would be allocated based on the different methodologies that exist in the current IMs.

MR NICK WILSON: I think that's probably where a lot of us are going to have concerns, because from what we can see it seems to sheet 100 per cent of those costs back to the regulated asset base and effectively be recovered from consumers. So whilst many of us might say yes in theory there might be a benefit that looks similar, putting a battery in or building a line; the question becomes fundamentally if 100 per cent of those costs are going in for the battery and the battery has other purposes, i.e. earning unregulated revenue or being able to do -- or cause distortions in other markets then there's a weigh off there to say if we could sheet all those costs back 100 per cent, is there a middle ground, is there a way in which those costs can be proportioned, or more accurately sheeted home to the actual benefit the battery provides. Can they be quarantined, I think that's something I'd be really interested in this workshop to understand.

MR VILLALOBOS: Yeah, I think we're planning on touching on that. That's what the cost allocation IM is designed to do that.

MR RUSS: It is important to note that just because 100 per cent of the costs get allocated back doesn't mean they guarantee you get to pass that through, you know, because at the end of the day their revenue's been fixed in advance before that happens, so you can't just automatically read because a distribution business gets to allocate 100 per cent of the costs to the regulated business that it's 100 cost recovery. So I think we've got Allan and Mark.

MR CARVELL: I've just got two questions, one is in this example, if the battery was owned by the EDB but not the EDB in the picture, what's your answer? My second question is, the way you treat the definition of an electrical installation, as I struggle at the end of the clause 82 it says "or used to generate or store electricity" because a battery does store electricity.

MS SHARPE: Could you just repeat what you were referring to?

MR CARVELL: The second part of that is the definition of your lines service is an exclusion for electricity installations and that includes generation or storage of electricity. It's not clear to me how you get over that perceptually or legally.

MS SHARPE: Are you saying with a battery example that it's generation?

MR CARVELL: I'm saying with a battery which stores electricity, it falls under the definition of electricity installation under the Electricity Act, and it's exclusion. Another way to think about that might be -- and if I was thinking about a PV on someone's roof -- and I think I can perceptually treat that as benefitting the network -- why isn't that in? It's not in because it's generation, it generates electricity.

MS SHARPE: We have looked at these definitions. In terms of electrical installation, it's not an electrical installation, that's considered part of the network. And then it does become quite circuitous when you look at what an electrical installation means and what it's not. Where these definitions are cross-referred to, they're not directly referred to in the Commerce Act as lines that's referred to, but we felt that -- this is just one view that we're putting forward -- that what those words are intended to mean are, it's the network that's regulated.

MR CARVELL: I think that's the challenge isn't it.

MS SHARPE: Yeah.

MR CARVELL: It's what you're interpreting this set of definitions to be.

MS SHARPE: Yeah, I would agree, it is quite challenging.

MR CARVELL: I think it's a little bit cute really, it's almost a definition or a interpretation to fit where you want the decision to land. It's not, the reading of the words, you are taking some liberties here. And that's got to be, I think, the nature of the debate, whether those liberties are tolerable or not. We'll come on to that I guess in terms of does the outcome, where we end up with the IMs, ultimately best meet 52A, and the consumers of the regulated service or not, it's a discussion we'll have later on.

But that comes back to the first question. If that battery was owned by another EDB, not the EDB in this network, what's the treatment, you’re providing exactly the same services (inaudible).

MS SHARPE: That's one of the scenarios isn't it.

MR CARVELL: If it's not connected to your network, can it be regulated?

MS SHARPE: Yeah.

MR VILLALOBOS: Yeah, we're can answer that I think as part of one of the scenarios where there's an EDB that sells, like retails the battery, but not necessarily the EDB serving that area.

MR CARVELL: Sorry, you're not quite understanding.

MR RUSS: No, we get -- yeah.

DR GUNN: Yeah.

MR CARVELL: The EDB might own the battery, it might lease it in exactly the same way as do in scenario 3, but I'm not the EDB that it's in Wellington, I'm the EDB from Southland.

MR RUSS: Yeah, yeah, no, we --

MS SHARPE: Yeah.

MR CARVELL: Just a different EDB that owns us. I know exactly what sort of service applies to a network and I'm selling those services to the network.

MR RUSS: Yeah, yeah, like an aggregator could, for example, in demand-side management.

MS SHARPE: What might be useful is those two questions, we'll make note of them and see when we come back to discussing this if we can provide a further response.

MR RUSS: But is the take-home, is the comment being made, is it more just a question, or is it more a direct comment that your view of the strict reading is in conflict with the definition we've got to or --

MR CARVELL: Well, I'm open to the view that the definitions are horribly circular, particularly Electricity Act piece of it -- and I say this as a non-lawyer -- horribly circular. Therefore you're forced to make some interpretation somewhere along the line. I suppose my concern is that you might be making an interpretation which ultimately doesn't best serve 52A, that you might get a view I might put forward, I’m not putting it on the table right now, but later on I might come to that point.

So the takeaway might be that definition is not clear, it seemed to me to be, in the paper, almost glib, if not sleight of hand, to just step over that interpretation. The fact that we've looked at this, we've looked at this thing in the Electricity Act and we've taken this approach to not include storage, even though it says storage.

MR STRONG: Nathan Strong from Unison. I think there's clearly a question about what the service is that we're providing to consumers and then there's the separate question of what is the most efficient cost of delivering that service. And just because you've got some piece of equipment that exists beyond the point of supply, whether that's part of your regulated service or not, I mean in some ways who cares, because if you're just incurring a cost beyond that point of supply and that's the best way of meeting or the most efficient way of providing what the customer wants, it's just a cost that we're choosing to recognise or not. So to me it's not really that clear why this is actually that an important part of the debate.

MR CARVELL: I think I agree principally with your outline, Nathan, which is it takes you back to 52A, and it is the interpretation you end up in your assessment whether the IMs are fit for purpose or not in the context of these emerging technologies, right, depends on whether -- how you define this definition, whether that's the best way and whether that's at less cost to the consumers of the service. And to go there, is it going to be better if, as Nick identified, the EDB does this and under ACAM or even under ABAA allocates large public costs to the regulated service consumer, the person identified in 52A as being the key player here. Or is it better, if that's in a market, and what the lines business delivers to the customer by way of price is a cost that it gets out of a market for these things.

DR GUNN: I think that nicely illustrates the levels. At that first level what do we regulate; we regulate prices. We have to be very careful there, the definition of the regulated service is very important because we can't capture within regulation income effectively from providing anything else. So we're only allowed to regulate prices of the regulated service.

But then when we come to what can those prices recover, that's where, as you say, the 52A questions come in; is to the extent that we found that going through these definitions didn't really help that much, because as you say they're circular, it says not storage, but there's an exception from storage when it says you're using it for conveyance.

So really what that popped us back to was again the original question we had is how is it used and therefore the question of the location becomes less relevant. So the lens that you then come to is that well, if it's used for that service then how much of the cost is appropriately provided consistent with 52A, 54Q and so on.

So that is very much the kind of stepping through we're thinking, is it first you're interested in the definition of the regulated service because we have to be very careful not to capture income associated with unregulated things, and then in terms of what costs we're allowed to recover, obviously there's some guidance provided by the statutory provision, but actually not an awful lot, it comes down to use and attribution again, we think, is that this isn't particularly helpful, the Electricity Act definitions, and so then it's a question of what promotes the Purpose Statement effectively.

MR RUSS: I don't think this is what you were saying, but I think it's clear from the work the team have been doing, is what's the most appropriate interpretation of what we see in front of us. Then today's exploring where that gets us. We don't have an answer about where we wanted to get to and then working backwards, today is actually exploring about where does that interpretation even get us, I mean whether there was a problem. So there is no outcome being, you know, desired here, it's just what's the best interpretation given all the context, and then saying how does that play out, and then we start asking the questions, is that inconsistent with the Purpose Statement, is that a problem for the IM review to address, or potential policy makers. So we've got Mark, the most patient guy in the room.

MR TONER: This issue is faced in airports a lot and I just wondered how this regulatory service filter used to provide contrasts with, I think it's used and useful for the airports, and can we learn anything, because obviously they're running two tills and stuff, so do you see some learnings from airports, or is this filter equivalent to the airport filter?

MS SHARPE: The two levels in the questions on slide 12, the first global question is really reflecting how you interpret the statute. So that's the is what the supplier doing question. And then the next set of questions are actually the words of the IMs for EDBs. So is the asset used to provide, is the cost attributable. So it might be that that's just reflecting the words that are relevant to suppliers in the electricity context as opposed to the airports IMs.

DR GUNN: I think a difference in airports too is that that chain of linked definitions, it's far simpler in airports, it's just their aeronautical, airfield and passenger terminal services. But there's obviously a huge cost allocation question because, you know, what's the floor space in the terminal actually used for, is it used for air-side services or is it used for the unregulated service. So that's obviously a big cost allocation question.

The definitional one doesn't appear, on the face of it, to be the kind of one you have to wrap a wet towel around your head and go chase up things in another piece of legislation and figure out where it's going.

MR HEALY: Simon Healy from Contact. I guess I'd be interested in your thoughts about, when you're looking at this, whether you considered other competitive alternatives to putting these things into regulated services. I guess the alternative could be that a network company purchases these services from somebody else, and whether that's another model that could be looked at, or could be encouraged or, you know, to be thought about how do we make as much competitive markets as well.

And the second question I had kind of related to that is, if this was, say, a pump hydro scheme, would you consider that different to a battery where effectively both do exactly the same thing?

DR GUNN: I think the example we gave in the original IM review that was, as I mentioned, the only one – if we really did give an example, all I can think of -- was the load control relay, and we did talk about where it was owned by the retailer. And so the recognition there that the load control service may be provided by the retailer but on behalf of the electricity distributor, and the electricity distributor's effectively paying a fee to the retailer for that service. So to us, because that's part of the conveyance of electricity by line, that's a cost legitimately incurred in providing the service.

So we explained that the regime, except for the different natural incentives around capex versus opex, but it allows effectively the choice between capex where the load control relay is owned by the distributor and in the RAB, versus the situation where it's owned by somebody else and controlled on their behalf and you pay a fee for it, is that those two approaches are both contemplated.

So it's recognising that costs can be both capital or operating. It would depend on lease arrangements, or fees, or all sorts of arrangements can potentially be coped for under the current provisions in that respect.

MR CAIN: The nub of what you're talking about here precludes any of that happening, that's already a --

DR GUNN: We hope not.

MR CAIN: That's been provided for, right?

DR GUNN: That's provided for, that's right. Lynne's got a comment.

MR RUSS: But start with the first question, though, I think it's just important that we -- where Calum hit on this before in response to Allan's question is, we can't regulate something we're not legally enabled to regulate. So our starting point is it's no more than what we're legally allowed to regulate. So it's not starting with should these markets be regulated, it's more, does it fit with the definition of line services, otherwise we have no role. I think everyone in the room, both sides would agree we shouldn't be in the market of regulating things we're not allowed to regulate.

MR CAIN: Yeah.

MR RUSS: So that mind-set is probably more important to reassure you guys that we're not -- I guess from the supplier side they don't want to see us grow our business, so to speak. I think you guys don't want to see the business grown either from the perspective of how you perceive it playing out in those other markets. I think everyone's on the same page of regulating line services, that and no more. There should be some --

MR HEALY: Yeah, I guess what I was wondering is there other model -- you know, you seem to be going very quickly down to the cost allocation route, which says, you know, yes this is part of lines services rather than going back to that, should this be actually something that is regulated and having a debate at that level. You know, there are other mechanisms, there are other things happening in the market, like Transpower's demand response system, which is a system set up where they can purchase these types of services from other players.

And I guess if I look at the future of the market and where electricity market's going, it's not as linear as you painted on this page. It's a very dispersed and very disparate future. What is the part of that future that we, as a country, want to have regulated, what is the part that we don't want to have regulated. I guess by picking it out looking at it incrementally we might be regulating something that we don't want to, or it's not the best outcome for competitive markets etc.

MR SPENCER: I think it's important to note as well that it's not -- the definition, as we've just found out through our discussions over the last few minutes, the definitions are not that clear. So I guess to that extent there is wriggle room in terms of where this goes. You know, it seems to me as though the definition has suffered from, you know, reasonably ad hoc perhaps legislative review over the years, where different bits of legislation are perhaps not as well connected as they could be. And here we are relying on that quite difficult, you know, series of interconnected links to make an extremely important decision around what's regulated and what's not.

DR GUNN: I guess fundamentally it all comes down to is it conveyance, and there's no further guidance provided in legislation as to what conveyance is.

MR COATES: Even if you go down the services route, cost allocation is still very important, it's just, like you said, it's a capex versus opex kind of situation.

DR GUNN: Exactly.

MR COATES: So it's still very relevant.

MS TAYLOR: Can I just add one point on that about the third party service provider. The third party may also be a related party.

DR GUNN: Yes.

MS TAYLOR: And there are rules that sit across that as well.

MS SHARPE: Which we're actually looking at with the input methodologies review, so that's another topic.

MR RUSS: I guess we're not trying to dodge this one, but you can see the problem we'd have is we're a creature of statue, we've got to interpret the definition of lines services and only regulate that, and then there's a risk, because it sounds like a perception that it's grey, then we don't think we should be in the world of making policy rules about how to interpret that greyness to achieve a bigger vision for how the market wants to play out.

MR HEALY: Yeah, I understand. And I guess the related party one's an interesting one as well is, you know, you have the related party provisions in there, and is the related party provision that might work here to set a level playing field where you actually have transparency of pricing for those types of services and others competing on the same basis. Is that another option we should be thinking about here rather than just how much these cost allocations are put together.

MR PARRY: If you're an aspirant battery investor there's a -- you want there to be a value stream you can tap coming out of the conveyance services. So you want to it to be recognised that these things have something to offer in terms of conveyance, that that's recognised and that value extreme exists to tap, because otherwise all you're left with is your ancillary and energy services.

MR HEALY: Absolutely, yeah.

MS SHARPE: Have we explored enough of that?

MR WOOLLEY: Sorry, could I just -- one interpretational issue, one that was mentioned before but we haven't covered it off I don't think. 52T(3) seems to me to some extent to beg the question it's supposed to answer, in that it says "any methodologies referred to in subsection (1) must not unduly deter investment by a supplier of regulated goods" etc, etc. I wondered the word "unduly" there, what is an undue deterrence and what is a due deterrence? Has the Commission given some thought to that?

MS SHARPE: It's relatively permissive.

DR GUNN: I guess there's quite bit of case law on this now because we did get taken to court on our interpretation of that provision. I mean part of the history of the cost allocation question -- there was quite a lot of it -- is that both in the electricity and gas disclosure regimes throughout the 90s there was an approach of using the avoidable cost allocation methodology. So electricity lines and gas pipeline businesses were used to that approach which effectively -- in a nutshell it allows the business to allocate the stand-alone cost of the activity to the regulated services effectively assuming that any other service is not there. So any benefit from the unregulated service being provided is effectively ignored.

So that's where the history had come from. So as Diego will talk a little bit more of the other two, we still have the ability to use that approach in some circumstances, but the two alternative approaches we've come up for cost allocation end up allocating less costs to the regulated supplier than traditionally was the case through the 1990s.

So not too surprising that when we put those rules in place they went to appeal and part of the appeal was around the question of this undue deterrence and what it meant. And there was an argument at the time from the supplier who took us to court on that one that effectively our approach really the only thing that would not unduly deter investment in an unregulated service was to use that stand-alone cost base allocation or the avoidable cost approach and not allow the regulated supplier to bear any of those costs of the unregulated activities, and we disagree.

So I'm sure there's a fair bit of commentary from the court, but I just don't remember. There'll be some that have looked at that unduly deterrence question. Effectively the challenge to our approach was dismissed, so there'll be some discussion in there about what undue deterrence means.

MR RUSS: I might have a very quick go at summarising I think probably what some of the concerns that seem to be coming, particularly from the gentailers. It's probably not the legal interpretation per se but it's just where it ends up. It's almost like if it ends up somewhere that is not consistent with the Act or unhelpful from your perspective, you're probably reserving your right to want to really go back and look at that interpretation, I think. It sounds like it's a bit hard to comment now because it's where it gets you is where the rubber hits the road is the problem.

I think what people are saying is it does seem to be potentially grey. We've put out there our ideas about how it could be interpreted and it seems in terms of where that's moved the boundary, particularly from the gentailer side, it's raising potential concerns, but we just have to see where it gets to. Is that a fair capture?

MR STEVENSON-WRIGHT: Nick, could I just ask you, it's retailers not necessarily gentailers.

MR RUSS: Yeah, sorry.

MR STEVENSON-WRIGHT: I think you'll find all retailers are quite concerned.

MR RUSS: Yeah.

MR STEVENSON-WRIGHT: And energy service providers.

MR SPENCER: Exactly, third party technology providers who are not even represented in this room and do not know this discussion is going on will be extremely interested.

MR STEVENSON-WRIGHT: That's the Harrisons of this world as much as is Genesis Energy.

MR SPENCER: Google.

MR RUSS: Stephen Drew's not here is he, I thought his name was on the list.

DR GUNN: From EnerNOC.

MR RUSS: Yeah.

MR NICHOLLS: Nick, I think one of the points that you were wanting to summarise, it was occurring to me too, which is if we go back to Susannah's picture on page 11, it looked to me like you were just trying to sheet home some of the dissatisfaction to it's terrible drafting in the Act. You're almost dodging the issue a little bit. I mean it is terrible drafting, but this picture I think attempts to present a pretty uncontentious result as far as where those definitions are taken to the network boundary.

And then also a pretty uncontentious, I think, proposition that as a matter of engineering -- at least in this picture -- the battery which falls outside of the -- on other side of the point of supply, nevertheless does contribute to network management and is that the red cross on that line, is it trying to show you avoid that capex or something; but, you know, it has that -- so it's trying to prevent -- while the Act isn't terribly well drafted, particularly the Electricity Act, the point of contention isn't really how it results in this picture, it's the result which is some costs which fall on the other side of the network boundary incurred by the EDB in an area where others might play more or less are, you know, uncontentiously used for the purposes of the service as defined. So you're saying oh it's all terribly drafted, allows us to slip past the hard point it seemed to me, which is grappling with the result here.

DR GUNN: I think that's what we're saying, it doesn't actually matter that it's terribly drafted because it all comes down to is it used for conveyance.

MR COATES: If you look at that diagram on page 11, what would be the difference of where that battery sits if that battery sat on the pole just inside that connected the line to the customer's house.

MS SHARPE: That's your picture on page 10 as well, yeah, got a battery hidden by the substation, yeah.

SPEAKER: I actually thought it was a hot water cylinder dispersing electricity.

MR RUSS: One other thing I'll just -- thank you, that was very helpful, I think that's where it gets you. I think Ross -- I think it was Ross -- made a very important point probably to everyone in the room to think about is, anyone who's in that market that wants to potentially exploit this having a revenue stream available for the -- you know, it's almost the opposite of the argument around vertical integration, is you want to tap into some of that benefit of the deferred capex for anyone that's investing in that battery, be it third party, retailer, a generator, consumer; in order for an EDB to convince us that they need to have some costs associated with it, it's likely that they'd probably need to meet these -- be treated to be considered to be inside the regime.

So that's probably just some food for thought for everyone about that, about what's the actual problem, which is probably more to what Diego will come to is how the costs play out and what that does in terms of level playing field, about whether it's in or out as we've just had pointed out.

So on that note I will finally, we've managed to do a good job of delegation this morning, I'll hand over to Diego.

MR VILLALOBOS: Okay. So I have the job of taking you through the pretty pictures for the next 30 minutes or 25 minutes. So we start on slide 15. So the objectives of these three scenarios that we put out just demonstrate the application of some of the thinking we've been talking about this morning.

We chose an example of batteries to test our thinking, but it could have been any other technology. There's nothing special about batteries but it's something nice because they are in vogue, they are emerging, and also they have the characteristic that they can be used in different ways to provide different services by the same or different people. So they lend themselves to different scenarios.

So a couple of caveats before I kick off. So these scenarios are not meant to be exhaustive, so we left it open to stakeholders to contribute a little bit and fill the gaps with their own scenarios, which some of you helpfully did, we thank you.

And also inevitably we use some assumptions, some of which may be erroneous or not too accurate. So I guess the point is that the assumptions tried to make the scenarios simpler while still keeping them relevant. I welcome you to pull me up on some of the assumptions that I've used that are erroneous and I'm happy to correct them. So the point of them is to make it simple and workable.

The final caveat is that we have assumed that an EDB is able and allowed under the law to do some of the things we described here. So they are not restricted, for example, by the Electricity Industry Act in terms of the large scale generation or large scale retailing, but it may be the case that actually some of these things, depending on the scale, may hit some legal constraints.

Okay, so scenario 1, this is the distribution network battery. So the basic setting here is an EDB that buys and installs a battery which is grid scale, it's large enough, but is sitting in its substation. So if you can see the picture there, it's a big battery with a yellow circle around it, so you find it. It's there, it's on the distribution network side of the substation. The EDB does this as an alternative to a traditional network upgrade, which we've illustrated by a -- as Andy just pointed out -- a second line in the sub-transmission network which it doesn't need so it has a red cross. So the EDB is avoiding this capex by investing in this battery. The assumption is that this is an economic cost-effective investment. So he goes ahead and does that.

So as I said, the location is in the EDB's network. The ownership, the EDB owns it. The EDB controls the battery as well. And the battery has different uses. So the primary purpose for doing it is that it defers, or even it could avoid capex expenditure. It also improves reliability to the extent that the battery is charged. If there is an outage on the sub-transmission network it allows the EDB to continue supplying the other side of the distribution network for as long as the battery lasts.

Then also to the extent that there's some big transmission pricing, then the EDB can use the battery to avoid some of the peak pricing in the transmission prices. That's a big caveat as my colleagues in the EA pointed out, it depends on what happens with the transmission pricing review. Another important caveat is that even though the EDB may avoid some of the peak pricing, it doesn't necessarily mean that in the short-term Transpower costs are lower because of where they are, so it would only be like pushing those costs to other parts of the network and other customers. But I guess the point is that in the longer term, to the extent that you avoid peak demand, then costs should start coming down in the future.

Then the final use, it's a generic, unspecified, unregulated service. This could be selling ancillary services to the system operator, or it could be trading or arbitraging the wholesale market, or other things that I'm unaware of. But the point there is that there are costs and revenues associated with the regulated service.

So the first question that we ask ourselves is, whether what the EDB is doing is within the scope of the regulated service. So this is the question that Susannah articulated before. The way that we use to answer that question is that we look at the uses of the battery, and we make a judgment on whether the use of the asset is within the scope of the regulated service.

I guess the point there is that there is no white or black, you know, rule to answer this question, it requires judgment. But at the end of the day you have to ask yourself, is deferring capex part of delivering the regulated service of electricity conveyance, is improving the reliability part of the regulated service. So you have to build an argument, an explanation -- that's what we do in the paper -- for why it is in within the scope of the regulated service.

Then once you answer that question, whether it's in or it's out, then the second question is, if it's in then what proportion of the costs and potentially the revenues should be within the regime, should be used for setting line charges down the line. So that's the basic setting. I don't know if you have questions on the scenario so far. This is some of the simple scenarios. No questions. Okay.

So then the interesting bit comes in slide 17, which is, once we've determined that this investment is within the scope of the regulated service, what happens to how we, the Regulator, treat the costs and the revenues. So perhaps before going through those three bullets it may be a good point to pause and just go to the cost allocation slides just to refresh our minds on what it says, the cost allocation IM.

So if you go to slide 23. This is a simplified diagram of how I understand the cost allocation IM working. So as you know, there are three different cost allocation methodologies that are listed down there. ACAM, which is avoidable cost allocation methodology; ABAA, accounting based allocation methodology or approach; and then I think it's our creation, OVABAA.

DR GUNN: Very much it's our creation.

MR VILLALOBOS: An optional variation to ABAA. So the effect of these different methodologies have is that they allocate more or less costs to the regulated service. So the ACAM methodology is the one that allocates the least costs to the regulated service, while ABAA on the right side allocates most costs to the regulated service, and OVABAA is somewhere in between.

MS SHARPE: Other way around.

MR VILLALOBOS: Sorry, other way around. Oh yeah, sorry, other way around.

OVABAA is somewhere in between but it's within those bounds. I don't know if there's questions on how those methodologies work or are we happy --

MR NICK WILSON: Can you just clarify why you think ABAA would allocate less costs for the regulated service?

MR VILLALOBOS: Yeah. So for ABAA -- and the accounting colleagues here can correct me -- I think what you need to use is some cost allocators and use these cost allocators to say, well essentially to allocate costs to the different parts of the business where these costs arise, or they're driving these costs. Naturally it's due to an outcome that allocates less cost to the regulated service and more cost to the unregulated service. That would be the case using ACAM, for example.

MR NICK WILSON: So who sets the ABAA? Is it the entity itself, the distributor comes up with the -- because why would a distributor -- why would it put forward a methodology that allocates less cost?

MS TAYLOR: So there's some rules about which methodology you're able to use. You can use ACAM if the unregulated service is not material to the business.

MR NICK WILSON: Not material?

MS TAYLOR: Yeah.

MR RUSS: I think they're on the next line.

MR VILLALOBOS: Yeah.

MS TAYLOR: Yeah.

MR RUSS: Before we go on, is there any -- maybe Lynne you're probably best to answer this -- from a practical point of view ACAM and ABAA, you know, relatively understood by the industry, it's audited by the auditors in terms of information disclosure.

MS TAYLOR: So the allocations only apply to shared costs and shared assets. So before you get there there are two buckets, directly attributable and not directly attributable. So anything that's directly attributable to either regulated services or non-regulated services gets allocated, and then costs or assets which are not directly attributable, i.e. they're shared between regulated and non-regulated services, then have the ACAM or the ABAA or the OVABAA applied to them.

So what we're talking about is a proportion of the total cost base that's subject to these different allocation methods, because there's a large proportion of the asset and the cost base which is very clearly directly attributable to electricity line services or not.

And that differs between businesses because businesses have very different operating structures and also accounting systems and methods and ways of accounting for cost. And that's partly why, my recollection is, we ended up with a principle-based approach to this input methodology because of the divergence between the regulated businesses became very hard to prescribe a set of rules for allocating XYZ costs and ABC asset.

DR GUNN: So to answer your question too about why the ABAA would be less than the ACAM, so to give a really contrived example, let's say the only shared costs an EDB had was to share its poles for use of fibre for telecommunications, for example, and let's say it met the thresholds that it had to go through the allocation exercise, and it asked the question on the poles under ACAM is would there be any costs avoided as a result of not providing the unregulated service, the fibre service.

And it may be that the poles are absolutely no different to have the fibre running across them than if that's the case with just the electricity lines. So effectively the costs that are avoided might be zero in fact so the entire costs of all the poles might go in. Could be quite different; if you had to strengthen the pole or something else then that would be the bit you'd avoid.

Whereas the ABAA approach would be looking at the pole and be asking a question about what's the cost causation of the two being used together, and there you're thinking about what allocators make sense about the use of the pole that comes into consideration. So that won't get you to the same outcome as 100 per cent of the costs are all allocated, which could possibly be the case under ACAM, for example.

So it's a bit of contrived example but it gives you an idea that ACAM is an envelope that's the highest amount you could allocate to the regulated service and ABAA would conceptually be somewhere lower.

MS TAYLOR: But typically the most common costs that are subject to the cost allocation methodology in terms of ABAA and ACAM, are your corporate overheads. That's typically where that particular methodology has the most impact.

MR HEALY: In terms of where you don't know, you know, in the future if some of these technologies you don't know how much is going to be used for different parts, how do you deal with that within these methodologies?

DR GUNN: I guess there's two things, there's the use when you're setting revenues going forward for a five year period and there's your information disclosure regime each year looking backwards for the most recent year. When we set the price path -- you might correct me when I'm wrong here Lynne -- basically the forecast assumes that that use will basically stay the same for the regulatory period. So the business gets the benefit of any changes, or wears the disbenefit of any changes that might occur during the period; has no effect, any change in allocation has no subsequent effect on the path we set.

However, each year the business is then reporting on what's happening under information disclosure. And so under information disclosure the actual, any changes occur in the allocation will be reflected in each year of the period but it has no effect on the path. When we come to setting the path for the next five year period it will then be reflecting the allocation that's more up-to-date effectively at that point in time.

MR HEALY: And the reporting, is that reporting on costs or reporting on revenues?

DR GUNN: It's costs, so there's both a set of public disclosures around cost allocation and it's also supported by information that's just disclosed to us in some cases to the extent the allocators are commercially sensitive and so on.

MS TAYLOR: And the allocations can change over time if the usage or the causality changes over time.

MR HEALY: I guess it's the revenue side that I see is the one that's very uncertain for the future. You could choose to put, you know, 100 per cent in the regulated asset base and then realise in the future it changes. What's the market mechanism to deal with that?

DR GUNN: Just to flip that around, I think one of the reasons we -- to separate out the cost and its impact on revenue from allocating revenues question -- they are a little bit distinct -- is we haven't thought there's been any need to allocate revenues because revenues are directly attributable to either the regulated service or the unregulated service. We haven't had to worry about where those fall. It's the costs that are shared, not the revenues that are shared, and so --

MR RUSS: Historically.

DR GUNN: Historically, historically, sorry. So this is the approach we took when we set them in 2010. So effectively, to the extent that costs are shared, and let's say 75 per cent of them go to the regulated service and what's left over implicitly goes to the unregulated service; that 75 per cent is what then, through line charges, can be recovered and therefore it will affect line charge revenue through the cost allocation. So it's effectively the other direction is that the choice around the cost allocation affects the revenue that's able to be earned through the provision of the regulated service. And what's earned in the unregulated service is irrelevant from our point of view because it's unregulated.

So in that situation it's the costs driving the allowable revenue rather than any consideration about what's the revenue we're starting from. The slight complication around that is that to the extent not all revenue is recovered through line charges, when we're setting price quality terms in advance we do try and forecast if there's any other regulated income being received as well. Because we recognise that that won't be being recovered through the line charges that are set. But as far as unregulated goes, it's unregulated.

MR HEALY: But under Part 4 there is the explicit term that they shouldn't be receiving excessive returns on these assets.

DR GUNN: In the provision of the regulated service, yeah, that's right.

MR HEALY: So you're saying anything that you earn off these assets in the unregulated which will give -- isn't considered?

DR GUNN: We're not interested in the profits from the unregulated activity. It does, however, affect the undue deterrence question, because for a business that wants to use the OVABAA approach in between and it's saying "well, Commission if you made us use the ABAA allocation, which would allocate a lot of our cost to the unregulated service, and we want to get involved in some new emerging service that if we had to do that we wouldn't make any return on that incremental service for many, many years, our board would say we're not going to do it".

So effectively that's the situation where you're allowed to move a little bit closer towards that, effectively the approach that allows you to fully leverage off your regulated costs through ACAM because it's all treating the unregulated services being entirely incremental and the incremental unregulated service is bearing none of those costs under ACAM. So OVABAA gets you somewhere in between, it's saying that in this temporary period where we need to get this new service off the ground, we're allowed to roll back a little bit the amount of costs that are allocated to the unregulated service. And what we require for that is effectively certification provisions that if we didn't allocate it in this way we wouldn't go ahead and do this other service.

MR RUSS: I think this diagram also demonstrates about the 52A versus 52T(3) or whatever, you know, it can't be more than a stand-alone cost because that would mean you'd effectively -- why would that be an interest to consumers of the lines services to allow even more to be loaded into the -- so that's exactly that question was asked earlier.

I think the other point about the -- it really goes to how regulation works, even though if the costs -- we make a forecast of what the costs are likely to be going forward and then if they're different, or incrementally every dollar that, give or take, an EDB spends is $1 less in their pocket. So to just say just because it gets allocated under disclosure to the business doesn't mean they've necessarily got to recover that for consumers, they're actually -- from a profit point of view from the regulated business you're worse off than if you hadn't incurred those costs.

So it's not just "good I can use ACAM, put it into the regular business and that's 100 per cent pass-through", the whole regime is set up exactly to not have that happen, to drive efficiencies and to effectively minimise costs where possible.

MR HEALY: Yeah, sure. I guess reading in Australia they have gone into the revenue side as well and bringing the revenue into this cost allocation etc, so it's interesting to understand the differences.

MR SPENCER: So to what extent -- if you were looking to design a regime that ensured a level playing field for all competitors and ensured that competition was promoted for the long-term benefits of customers, would you look at unregulated revenues and consider those in the wider scheme of things?

DR GUNN: To get there we'd have to be convinced that the first proposition was consistent with the Purpose Statement in 52A.

MR RUSS: And when you say level playing field, it's like saying should you stop Google and Tesla entering the market because they've got massive cost base to allocate their overheads on. If they choose to enter a market and use their other businesses to cover their, you know, the incremental costs, so what do you mean by level playing field. I think what you're saying is somehow the regulated business gets some advantage through being regulated.

MR SPENCER: I don't know if it does but that's a risk.

MR GREG SMITH: That's the bit you need to clarify, right, because there seems to be some assumption that the regulated business has somehow got some competitive advantage here, and that's the bit we need to understand and explore through possibly in the next scenario exactly how that really plays out, because it's not clear to me what competitive advantage actually there is. And in some respects one might argue that other players have a competitive advantage if they know what profit the regulated participant could earn in that market, and if they can do it for a cheaper price good on them, consumer wins, right? So I'd be interested to explore in that next scenario that assumption that there is some competitive advantage for these proposals.

MR RUSS: And like I said, the point was very well made this morning, there's the perceived competitive advantage through the cost allocation and then any perceived advantage through how the code works, access to information, knowledge of the consumer, which you could also argue that other people in the market also potentially have information that might be helpful.

MR COATES: One of the things I find quite difficult with this is the high level in which you need to do your accounting cost allocation treatments, and in the real world the detail of each individual installation and the value that that installation brings to the network. So you've talked about an example where you're deferring capex, well okay once you've deferred the capex that investment (inaudible) half of its value has now disappeared, because you now have to go and make the investment anyway, and actually what you want to do is pick up that battery somewhere else.

These are actually the natural engineering advantages that distributors have as opposed to the home owner. So if we're owning and we're selling to a home owner and they're funding 50 per cent of the cost and we're funding -- should use different words to that -- we're paying for the whole thing but we're getting funding through some lease or some annual contribution to funding half of it, we're paying the other half; there might be an option for us to plug and play where we'll pick that up and we'll shift it somewhere else.

In that case it sits really nice on our asset base. Okay, you've got to tell the customer now they've got back-up battery support in their home that that's the price/quality trade-off they have to make.

MR PARRY: It's the same underlying fundamental happens that it's a third party investing in battery and part of the value stream is capital deferral (inaudible) from the EDB, that again disappears once the EDB's (inaudible).

MR COATES: (Inaudible) no longer want to actually pay for that service because (inaudible).

MR SPENCER: I think there is some difference between Google and Tesla as well. I guess they're not -- the rest of their business is not a regulated business, it's an unregulated business which they're taking risk on in competitive markets, so it's quite a different starting point.

MR NICK WILSON: I think the fundamental -- for me Nick anyway, the fundamental question came -- my assumption was that if you're putting these things into your regulated asset base then you're allowed 100 per cent to recover those costs from consumers, and that's where we would see that being regulated cost advantage, in that scenario. But I think what you're telling us is that don't make the assumption that just because the costs are being allocated 100 per cent that the EDB then has the ability to recover 100 per cent of those costs from consumers. Is that right?

MR RUSS: Yeah.

DR GUNN: It might, so there would be some circumstances where the 100 per cent might be recovered first if the amount of unregulated earned from the business is very small it's able to use the ACAM approach. So that's the first thing which may say you're allowed to use ACAM. ACAM doesn't mean 100 per cent allocation, however, because the shared costs, you still have to go through the exercise and think would any costs be avoided if I was not providing the unregulated service.

But if the answer to that also then is you've got through -- I've got a very small unregulated business, so I get into that space, I'm allowed to use ACAM, you've done the avoidable question and nothing can be avoided; in that situation you'd be left with 100 per cent of the costs being able to be recovered through the regulated lines charges.

MR COATES: The five year reset process, of course, creates lots of tension there. If you've got two things, the traditional 50 year solution and a new emerging technology 15 year solution, you know, the fact that you might be making the first year into your reset period means that you've actually given away a third of the income from that asset which has appreciated really quickly as opposed to one that's got a long life. You're actually only missing the first 10 per cent of that life's revenue. So there's all those things come in play and if you go into detail it makes the business case (inaudible) at best.

MR RUSS: Yeah, I think that's an important thing, it's basically the risk, I guess, is being perceived from the non-regulated businesses that these investments are bankable and therefore represent no risk to the regulated monopoly, and that's what creates the advantage.

MR SPENCER: I think it's a different risk. I'm not sure if it's no risk but it's certainly a different risk. I think the decisions which EDBs are making around investing in batteries into the networks are probably quite different than the decisions that we might be making. So that's a materially different start point.

MR PARRY: The other point I think you were getting to was, just because they're allowed to allocate it into the asset base, doesn't mean they want to maximise those costs, you're still effectively, if Part 4's working properly, wanting to minimise the costs.

MR SPENCER: Yeah, sure.

MR PARRY: If there's a third party provider who can give you a least cost that's less than owning the battery than that ought to be attractive to the EDB if Part 4's working properly.

MR GREG SMITH: That's right, whether it's opex or capex in some respects we're relatively neutral to. We're incentivised to do these things at the lowest cost we can under the way it currently works. So if someone can sell it to us cheaper, that's a very attractive option. I'm just not sure when you talk about regulated cost advantage, could you clarify what the --

MR NICK WILSON: We're just saying the fact that you're allowed to recover those -- clearly for an emergent person coming into the market and putting batteries in or trying to sell a proposition to a consumer, they don't have the luxury of being able to recover some of the costs of that battery from the consumer base.

MR PARRY: I guess that comes through contracting. You're contracting for a service, that service might be a three year contract, a four year contract, or a ten year contract, so --

MR NICK WILSON If it was with a distributor, yes, I can see that. But I'm saying if you were just trying to sell batteries into a home, for instance, are you competing against a monopoly that gets a regulated cost advantage.

MR GREG SMITH: But the model -- I'm struggling to understand this -- what's the advantage you're referring to? Is there some -- because we've got --

MR NICK WILSON: Because you'd rather put it into your asset base and earn WACC on that.

MR GREG SMITH: Yeah.

MR NICK WILSON: We obviously can't do that if we're investing -- if we're trying to compete, we can't earn WACC off batteries, the only return that we get is what people are prepared to pay us for in the marketplace.

MR GREG SMITH: But if you can do it cheaper than that --

MR NICK WILSON: I guess the concern is that that artificially skews the market because it makes it hard for anyone -- everyone else comes to a third party provider and says "well, you know, I can get the batteries put in by my distributor far cheaper or far more readily than I can from you, therefore I'm going to get it from" --

MR GREG SMITH: But isn't that an outcome of a competitive environment for the consumer? So if you can do it cheaper than the regulated WACC return you're going to do that.

MR NICK WILSON: I'm saying you wouldn't be able to in that instance though.

MR GREG SMITH: So does that mean it's going to **[multi-speakers]**

MS BLYTHE: There's the opportunity. I quite liked -- Simon you were there when you said it.

MR HEALY: Yeah, sorry.

MS BLYTHE: When you talked about Transpower's demand exchange, because what that's doing, it's creating the opportunity for multiple players to participate having identified "got a problem Houston anybody can help". And when I look at -- as a non-engineer, never mind a non-lawyer -- I look at an asset management plan, most of it's gobbledegook to be honest, you know, but if I give it to an engineer and I say "right, this is what I'd like to be able to see an opportunity", we all know that they'll be at a level of, you know, whether they're at 10,000 foot or 20,000 foot, you've got more within the EDB to know where the opportunities exist.

So to me the level playing field is as much about asymmetry of information, which as a customer of an EDB somewhere in the country, what comfort do I have that I am getting the long-term benefit to me. Because I, you know, and if I'm a trust, recognising it's a different set of, you know, part of the rules there, I might have more comfort. But how do I know that Orion, or Vector, or Wellington are saying I think I could do with some batteries here, I can do them for 100, is there anybody out there that can do them for 90? You know, and having that conversation. And when it's one battery, you know, when it's one $7,000 Tesla, you know; but when it might be hundreds or thousands of them that's a question when you'd want as a -- if I'm going to be paying too much, I want to know.

MR COATES: Is there a higher level question here that says, you know, the provision of assets there's a natural monopoly position there for EDBs, but actually in terms of information there's a natural monopoly position as well.

MR NICK WILSON: Absolutely.

MR COATES: It's actually just impossible to communicate the amount of academic and information that we have to the rest of the world given that even -- perhaps we're just in a natural monopoly position around there as well.

MR RUSS: Is there something -- it's like two conversations happening isn't it. Like one of them is also about just someone's ability to finance a battery. Because we've had quite a few I think experts, the Smart Grid Forum brought over that, you know, the one that everyone should be scared of are the banks, right, if you think who can sell you a, or lease you a battery for very low levels of financing; it potentially could be banks if they wanted to get into this market.

So, you know, you're talking about a competitive advantage that maybe come from how someone's able to finance a battery in terms of what offering you can make a consumer rather than necessarily coming at it from the point of view that -- because EDBs, to break-even I guess, have to finance it, the charges would reflect the RAB times WACC-type approach.

MR SPENCER: I think that competitive advantage is dwarfed by the asymmetries information advantage, because that's where most of the value is with batteries is as alternatives to network enhancement. So that's where all the value is. So the person that has access to that information will have a strong advantage over your bank.

MR COATES: So you either take a big bold step and put in the system operator-type world at the distribution level (inaudible) to make information provision available, put a market around it to make it a level playing field, or you actually say that's too big a deal at this stage, we're going to have to work with something else in the meantime. In the meantime we will have this natural monopoly position around information.

MR VERSTER: I think the thing that I'm not seeing is that we do have a strong incentive to spend as little as we possibly can. So if there is a chance of somebody coming and offering a service at a lower price then we've got the incentive to actually go out there and ask for that. So it's not in our interest to hide that from anybody. So somewhere we do need to recognise that when we put in a battery also something for deferring capital investment and so on, we believe that is the most economic way of doing it at this stage.

MR RUSS: Aren't we just talking about who gets the jam? If something costs less than the capex it defers, in theory the EDB could pay right up to that value away, or it could keep it less the cost of providing it and that will be the dynamic of a third party. So it's how do the benefits get shared where there's some costs avoided and the cost of doing the thing are less, and there's some surplus there, and how is that surplus divvied up seems to be the underlying thing that people are really asking questions around.

MR COATES: Just go back a step. You asked a good question I think of John here about where the Smart Grid forum is at earlier on, and I think we've spent so much time in the engineering world actually thinking about how do these technologies actually work, what will they cost, what do the technical solutions look like, what is the actual economics around them before we even get to who's actually going to realise the benefits and how is it all going to be split up. This is an enabling forum to try and get these rules right. But we're actually still getting our heads around the economics and how they'll be applied and what are the technical issues, so it's quite challenging.

It's not until you've actually done some things and you actually start to understand the customer value propositions, how much the customers actually value having a battery to keep their power going for two hours when the power goes, when the network's down. We don't know how much people are prepared to pay for that yet. So we don't know how to split that value proposition and how to present that package to try and sell it. That's what makes this conversation difficult, we haven't got the real world.

MR RUSS: I think we're saying that no-one will probably have a problem with how those benefits are divvied up as a commercial outcome and they get divvied up. I think the problem that's being put on the table is somehow for a big monopoly the financial benefits of regulation or privy to information, that distorts that commercial negotiation of how these benefits will get shared between potentially a third party, or whoever that be, or how much the EDB gets to retain themselves, either through regulated or unregulated profit.

MR SPENCER: I think at the end of the day it's customers who will decide what the industry looks look like in the future. So customers will decide how they consume their energy and how that energy gets delivered to them. Our role I think is to make sure that customers have as much choice as possible. And I think to enable customers to have as much choice as possible we have to make sure that the market is as competitive as possible. So our concern is that's right, that there won't be symmetry of access to those benefits and as a result customers are the ones that will suffer because they will have fewer choices.

MR RUSS: Yeah, so to bring it back to the scenarios, so if we go back to those scenarios, can we see how the current cost allocation rules create a problem about how those benefits would be accessed, maybe that's another question to be asking around it. But we've only gone through a supposed simple one so far. I don't know if we want to talk any more about the cost allocation, I think everyone's got the basics of it right, so --

MR VILLALOBOS: Yeah.

MR RUSS: So maybe worth going back to some of the other scenarios. You know, it seems relatively well received that the approach in this, the location, the ownership, the control, the use, the revenue streams, this is the framework for looking at these scenarios. I don't think anyone's identified anything missing. So maybe if we can focus on the next couple of scenarios about how the current allocation regime would potentially generate any concerns people have about in terms of accessing the benefits or any other problems that people see about how they're applied.

MR VILLALOBOS: Yeah, so shall we go to scenario 2, scenario 3?

MS SHARPE: We can touch on 2.

MR VILLALOBOS: So 2 is the other easy one, which is a battery that is owned by the consumer, controlled by the consumer, the end-consumer. It is located behind the meter. And the consumer buys this battery from an EDB. It could be its own EDB or it could be an EDB from somewhere else. This is an assumption that we made to explore what the treatment of that money exchange.

But just briefly to finish the set-up; the uses of the battery is -- the primary use is to reduce the consumer's bill, that's why the consumer puts the battery there. So an associated assumption is that there's a time of use tariff that the consumer can use to optimise its timing of consumption. And then there are the same sort of effects that the previous scenario had in terms of deferring capex and improving reliability and reducing submission charges potentially, but all of these are unintended. These things happen to the extent that pricing is aligned with peak demand. But the consumer is not investing in this battery to achieve those benefits. He's only doing it to reduce its bill.

So if we go to slide 19, in this scenario the battery is not used to provide the regulated service, therefore the capital costs are not considered in the regime. Same for opex, and same for the revenues. So I guess the key here is, to answer the first question, is it in or out; it's out because the use that the consumer is making of this battery is not to deliver the (inaudible) electricity, even though some of the effects may be unintended or intend, or maybe the same as when the EDB was investing purposefully to achieve those outcomes deferring capex, improving reliability etc.

MR RUSS: Depending how the battery was used it could make things worse, right.

MR VILLALOBOS: Yeah.

MR RUSS: You could imagine a scenario where someone -- you wouldn't imagine there'd be a pricing regime maybe apart from where we are at the moment where people would --

MR SPENCER: It's unlikely.

MR RUSS: -- charge at the wrong time. But because you can't control these things they could actually be disbenefits potentially as well.

MR HEALY: In terms of Diego just to confirm, if the EDB were purchasing services like the break-down deferring capex or something in the situation that opex that the EDB would incur (inaudible) recover through the IMs?

MR VILLALOBOS: I think that's the case. If --

MR RUSS: It's probably more characterised is that opex would be viewed as a legitimate cost incurred providing the regulated service, and then like all costs it would play out and their recovery would be a function of how it all -- the stuff we talked about before, but it would be recognised as a legitimate cost of providing regulated lines services.

MR PARRY: And in this scenario the opex the EDB would be incurring would be influencing the charge/discharge pattern around trying to make sure however this thing was used was (inaudible).

MR HEALY: So if you had a platform like Transpower's demand/response platform but for consumers somehow at a lower level, that would be a platform --

MR RUSS: As I say, Stephen Drew was supposed to be here today but he must --

SPEAKER: (Inaudible).

MR RUSS: Yeah, because this is no different to demand side management of any form, right, like it's a legitimate thing that a third party could provide, an aggregator can provide that the distribution business would value that service and be prepared to pay for it in order to minimise their total costs of providing a regulated service.

MR CAIN: There's an interesting, you know, comparison to Transpower's (inaudible) how they feel about Transpower's DR they feel quite strongly that it's bad, they perceive that it's -- they might perceive that it's, you know, it's Transpower competing using regulated funds to compete in a competitive market, whereas we might view it from a point of view of reducing cost. It's lower cost for us and more efficient for us, but it's not the perspective they might have, and a similar sort of, you know.

MS BLYTHE: I think one of the things is sometimes it's about what's the stories that you need to tell around it. Because if in that case, you know, there are some positive benefits and those messages have got out there, and if the distributors are partly saying that, absent the incentives, that they will go and find the 90 rather than the 100, then that message needs to become more transparent, because if you're the consumer or a group of consumers that are out there, you don't have confidence, then you actually need to do a good message; like what work's going on.

MR RUSS: In some ways, you know, we've got our ears open to all the things that could impact on what we look after, right. We have information disclosure and a lot of that includes the distribution companies publishing an asset management plan. If you were inclined and had the right background you could read an asset management plan and work out where the network is constrained, where the batteries would add the most value, and I'm sure there'd be people that would commercially do this for anyone that was interested.

So it might not give you all the answers, and I think that's something we could take on board about whether information disclosure could help -- if that becomes the main concern around this, around transparency of where batteries would add value to the network and how to value that, it seems actually more like something could be addressed through disclosure rather than changing cost allocation rules, so --

MR COATES: We actually provide a DSM table in our asset management plan. It talks about the key half a dozen projects that are really causing the need for investment and it talks about the value per kilowatt avoided per annum for a one, two and three distribution. We've never ever had a phone call in all the years that we've published that about that table. So it's about the industry getting motivated. And I'm sure if they do get motivated and they ask for more we can provide more, but there is a limit to that, there is an actual (inaudible).

MR RUSS: You know, Orion has probably been leading that area, you guys have had experience with the upper South Island load control for some time and stuff like that, so probably not all EDBs are at that same level. But I think that feedback counts for a lot, if you hear there's a problem with transparency we've got an AMP that's pretty transparent about, and including valuing what DSM would value. It goes a long way to answer that question about how would you work out how much revenue you can tap into by cold calling in whatever suburb it is in Christchurch that's got demand forecast to exceed capacity.

Shall we move on to the tricky one.

MR VILLALOBOS: Yeah, so last scenario.

MR NICHOLLS: Sorry, just a question more of curiosity, it's about scenario 2, because there's so much conversation about the concerns around competitive playing field has proceeded on the basis that you would invest in these batteries for network management purposes, right, that's where (inaudible). Whereas scenario 2 is just squarely, it's either there's a benefit to consumers that justifies spending money on batteries or it doesn't (inaudible).

MR RUSS: It's retailing the battery, right.

MR NICHOLLS: So what, you know, what a non-engineering person would take from the conversation over the last half hour is that this is just so unlikely. Is that the world we're going into? So there's the business case just from the consumer benefits purely, does that just not support batteries?

MR COATES: I think the two worlds is all around the cost reflective pricing. So the second scenario comes about because the industry's taken steps to get their cost-reflective pricing right and he actually is responding then to a distributor market signal. So you're actually still getting deferral of capex if the pricing signal's right.

The other world is that the pricing doesn't really have to be that flash but you're just contracting (inaudible). They're two different (inaudible).

MR NICHOLLS: (Inaudible) kind of a question, but it did feel important as to sizing some of these information issues. Because if the benefits to consumers are rolling out batteries, we'll support the roll-out anyway. If you weren't of that view or of that likelihood then the information things were a lower importance. But if you don't, if you believe the only way these things are going to get rolled out is if you can tap into those network issues.

MR HANCOCK: No, no, I mean the counter example is when a person's got PV; the distribution business, for whatever reason, they might have a commercial relationship, it means they're a very credible retailer of storage solutions but it's not just about wholesale power that the consumer will be storing, it could be stuff that they've generated themselves and they don't have to go off grid for that to make sense as well.

So as a scenario I think it's as plausible as all the others. I take Glen's comment that there's 3,000 other scenarios out there that are all completely unknown, they're uncertain; but it's as relevant, I think, as the other two.

MR SPENCER: I guess the work we've done on batteries would suggest it's not economic and it won't be economic for quite some time for consumers to purely invest in one of these things just on an electricity arbitrage basis or to support their solar PV system. It truly is reliant on some sort of network avoidance price signal. So some demand charge which comes out of the distribution pricing discussion would be extremely helpful. But in the absence of that sort of pricing we don't expect very many of these batteries will get rolled out.

MR COATES: Still even if the pricing is right, there's still the issue around short-run marginal cost versus long-run marginal costs, so that distribution pricing is going to be pitched at the LRMC, it's not going to pick up on these localised issues where these technologies (inaudible) defer investment. So you're never going to get as far down that world as you want to be.

MR RUSS: But if you start with the world of consumer choice, and for whatever reason an individual wants a battery, someone out there will make a buck selling them that battery. What we're saying here is if an EDB does that it's just retailing batteries so it doesn't hit our regime. I think that's the point. So if people have an ability to access a market or whatever advantage in terms of their retail or financing, depending on the arrangements they put in place, it is just providing that battery as anyone else would have, so --

MR SPENCER: But I think scenario 2 perhaps shows something which we haven't talked about that, and that is the -- so there is -- I would say there's almost certainly a benefit there that the network company has received through the individual purchasing that battery and operating that battery, because if they're looking to arbitrage electricity prices there'll be correlation between that and peak demand on the network. So it's almost certainly the case that the distributors receive that benefit even though it wasn't his intention to receive that benefit and he had nothing to do with it. But as a result that benefit has been lost to the consumer, but it's been obtained by the EDB, so --

MR VILLALOBOS: During the period only, right. Once you come to the next price control period you would expect that some of those benefits would be reflected in lower --

MR SPENCER: Yeah, perhaps I guess smeared across the whole network. But for a customer it feels like an opportunity, quite a significant opportunity lost.

MR RUSS: I think it's like a 2A scenario isn't it; what happens if the EDB sells the battery at a deliberate discount to take account of the benefits it gets on the network.

MR SPENCER: Yeah.

SPEAKER: Yeah.

MR RUSS: Yeah.

SPEAKER: But it doesn't control them.

MR GREG SMITH: But then it's going to have to want to control that battery, right, to get those benefits, surely.

MR RUSS: Not necessarily, it's just a probabilistic thing isn't it. You would maximise the benefits by controlling it, or you could take a risk that naturally the way pricing falls out that if they were to arbitrage sensibly it would likely to have network benefits, right? So it's just the effectiveness would be impacted on control, not necessarily the theoretical ability to add a benefit.

MR SPENCER: I think in scenario 2 in every case an EDB could probably afford to sell a battery for $1 less than a third party technology provider could sell a battery to that customer, because that EDB may well be confident that's it's going to harvest a network benefit that the other seller isn't going to. So he can always sell a more competitive battery than the next guy.

MR GREG SMITH: But what is the network benefit you're referring to? That's the bit I'm puzzling over, right, because if the consumer runs his battery during peak time, they lower their variable costs, we've got variable revenues, our revenues fall, right? So I'm trying to understand what the benefit is you’re thinking that we're getting.

MR TONER: Also how is that different to an LED light bulb?

MR SPENCER: Yeah, it's probably not different to an LED light bulb if an EDB's selling it, it's perhaps the same issue.

MR TONER: But where does that take you, though, because we can't say consumers stop buying LED light bulb, I just don't know, I don't understand where it goes.

MR SPENCER: No, they don't have to stop buying LED light bulbs, but I guess --

SPEAKER: The question would be should the distributor be able to recover that from their RAB.

MR SPENCER: EDBs would be the cheapest sellers of LED light bulbs in this room if they were allowed to put LEDs in their RAB. And if there was asymmetry of information in terms of what that LED light bulb or mass deployment of those LED light bulbs, what impact that may have on the network and on the future network investment.

MR PARRY: One thing that's quite useful is that the deferral benefits from the EDB'S point of view as well, they're quite fleeting and unpredictable and move around the network, and they aggregate as you get deeper into the network. But actually it's not a sure bet, I think, from an EDB's point of view that if I put a discount (inaudible) Countdown I'm going to avoid on LED light bulbs --

MR SPENCER: Yeah, I'm sure you're right, yeah. Apologies, it's -- yeah, generalisations but --

MR RUSS: Is it not so much, if you keep this simple scenario that they just -- not that it goes into RAB, it's just they've got -- you've got an EDB that's got two businesses, a regulated and unregulated, and you're basically saying that the unregulated business gets into retailing light bulbs and they're basically saying they can arbitrage between those internal pricing such they know that it's likely to result in a benefit to the unregulated. So not in real cash flows but in opportunity of capex avoided, nothing to do with the RAB, so that's just a scenario where there's a --

MR SPENCER: It's a ring-fencing issue.

MR COATES: Doesn't the other provisions in the Commerce Act cover that kind of thing? Because that's (inaudible) to anti-competitive behaviour. If you were offering a discount for your own battery that you sell versus not from a same discount for a battery some other vendor supplies, I would have thought that that -- because all you're doing is discounting the price.

MS BLYTHE: That's why the use-of-system agreement I think is absolutely critical, because it needs to be transparent as to what terms and conditions you provide the in-house business. And I recognise that's not the Commerce Commission, that's the EA's responsibility.

MR CAIN: In that scenario a distributor would have no incentive to be the retail, you know, (inaudible) they'd be saying what we care about is getting LEDs out into homes and, you know, presumably (inaudible) selling that for a retailer as a --

MR RUSS: Yeah, but they also might have a legitimate business model of making money on retailing.

MR SPENCER: I don't think we can sit here and guess what business models different interested parties are going to roll-out in the future, I think it's entirely conceivable that network companies are going to want to build direct relationships with the people on the end of their wires and sell energy services to them in a variety of different means. So I think they'll have every interest to build a relationship directly with that customer.

MR GREG SMITH: But that's going to be ultimately -- if that's the best interest of consumers, so don't forget consumer behaviour here, they're going to be incentivised by what's the lowest possible cost for them, right? So if everyone in the market can provide that it's going to be, you know, presumably a business winner. So consumer behaviour and the way in which they react to these things is also a fairly key factor. It's almost self-regulating.

MR NICK WILSON: Can I just ask a question, so -- sorry it might be a stupid question -- so obviously there's benefit for EDB from lowered capex, cost of deferring -- not having to build a more expensive line. Isn't the difference of the battery compared to other technologies, if we're talking about LEDs, that type of thing, is you actually get an unregulated revenue -- or are the revenues unregulated? So every time I fill that battery up at, say, $40 a megawatt hour and I discharge it at $120 a megawatt hour because I'm trying to achieve that reliability benefit, I'm trying to lower the cost to my consumers as well, I'm getting a revenue stream out of that battery.

MR RUSS: That's actually scenario 3 I think.

MR NICK WILSON: Okay, that's the one that we're going to -- that's probably what I'm actually more --

MS CASEY: They are two different conversations it seems, there's the conversation about making a profit out of selling a piece of retail something, be it light bulbs or a battery, and making a profit from selling that to a consumer; and then there's the conversation around competing for lines services and making a profit out of providing lines services. Those are the two conversations that seem to be happening here and there's a sort of a confusion between the regulated funds being used to prop up a competitive retail selling business, and regulated funds being used to unfairly compete in the provision of lines services, which is what we do, what we are regulated to do as a monopoly service provider. And I think there's some confusion between how the regulated funds are used to prop up what is a competitive retail business and what is a lines service.

I think some of the conversation is straying down the let's compete in the lines services area, which is one conversation, and some of the conversation is down the lines of unfair subsidies in a truly competitive market, and maybe we need to find where that line -- and these scenarios actually have that line in them to an extent, but we do seem to be blurring those lines.

MR SPENCER: I don't think we're trying -- we're not allowed to compete in lines services but what we're trying to achieve is to ensure that customers have as much choice and that prices are as low as possible for these emerging services that will be delivered through a multitude of different business models that we probably haven't even begun to think of yet. And we're not saying that EDBs can't compete in these markets either. We think the market should be as competitive as possible but they should be fair.

MS CASEY: So for the sake of pure theoretical argument here, but if you've got an EDB that just slaps batteries for free, doesn't charge the consumers anything in an area of congestion and the cost of that's in the RAB, it's just on the houses, so they get no revenue from that, aside from what they are entitled to recover under their regulated revenue, you have no problem with that? I mean if you're wanting to sell batteries to those consumers, obviously we've just gone and given out free batteries, but if we're doing it to provide the lines service and for no other reason.

MR SPENCER: I don't think -- well, they're not free batteries.

MS CASEY: So if we're looking at the extremes here of, you know, where you've got the lines service and where you've got the competitive market.

MR SPENCER: Yeah.

MR HEALY: Could you not have an alternative there where you effectively procured a service from that region? You effectively can, rather than having to go and install batteries yourselves, or you could put them in a ring-fenced entity; if you can send a signal to say this is a problem region for me.

MS CASEY: But still the cost of that is all still recoverable from us in our regulated business, so it's where --

MR CARVELL: You pay a price which speaks to the value to the network of the relief it's going to get from the batteries. I think it's the point, that's what a market does. It seems to me you're suggesting that these scenarios are distinct and they have a different character, but I think, where we got to is that the EDB could discount the battery to affect the value (inaudible) as Nick said, that discount ability is open only to the EDB at the moment under this sort of -- the way we're talking about this, it's only open to the EDB. It's not open to a third party provider.

I think the proposition here about having a market is the EDB could monetise that benefit, make it available to people to compete for, and that could be the EDB's own, you know, battery provision subsidiary ring-fenced doing a competitive thing with other people who are competing. The problem we're tackling with here is the EDB seems to be in this one foot in the competitive space and one foot not, and that makes everyone uncomfortable.

You could put some ring-fences around that and make it quite clear what the EDB's doing as an EDB is valuing, working out what the engineering benefits are of doing batteries instead of investing in more expensive solutions, pricing that out, putting out a price signal and getting a response, and providing that response themselves through our subsidiary which is at arm's length. It seems to me to be, you know, where this conversation is sort of tip-toeing around.

MR RUSS: I think we agree with that isn't it, because I think that's the unanswered question is what advantage do they have for it being regulated. Because you could imagine a retailer or actually more specifically a gentailer depending on their position in the market having other benefits of putting batteries in a certain location as well that would give them a competitive advantage potentially over other gentailers that have a different net position.

MR CARVELL: But the gentailer in all those things it's doing is doing it in the context of a competitive environment.

MR RUSS: Yeah, yeah.

MR CARVELL: The EDB, as part of what it's doing, is doing it in a situation where either within the regulatory period it's reaping a benefit because it's getting a solution put in place which is lower cost than its capex allowance and its rate set, it's deferred to a capex that otherwise it would spend, it's better off. And at the next reset this thing's in its RAB, so from there onwards it's getting its return through the RAB process and the price resets. It's got those privileges and I think the test here is to make sure those privileges aren't going to distort what could be a competitive market.

MS BLYTHE: And that's the bit that's important.

MR VILLALOBOS: Yeah, that's a policy higher level question, right, because ultimately it's about the consumer but the consumer of what. And so --

MR CARVELL: Well, in the scenario where the EDB is, you know, providing the discounts or whatever, the person who pays for that is the consumer of the regulated service, your consumer under 52A. They won't pay that if it's priced different -- if it's priced on a competitive basis, they will pay the competitive market price which we fundamentally believe, or assume, provides the best outcome.

MR CAIN That's the question isn't it, Allan, (inaudible) it's not clear to me --

MR CARVELL: That's what we've got to be testing out here.

MR CAIN: It's not clear to me whether one approach is better than the other. You might find with that approach you end up with worse outcomes for consumers, or you might find you end up with better outcomes. I think that's what --

MR CARVELL: I think that's absolutely right, and the debate here really is are we just foreclosing on that option, or are we testing out whether you would get a better 52A outcome by going down (inaudible) market.

MR STRONG: That's a structural question, structural regulation question as opposed to a --

MR CARVELL: I think you can influence it by the way you interpret your (inaudible) IMs. As soon as you go to the definition of competition we had before and say storage is in, the regulated constructs, you've almost foreclosed that option. If you took the alternative view and said storage is out --

MR STRONG: What do you mean by "storage is out", do you mean the costs --

MR CARVELL: Storage is not part of the lines service.

MR STRONG: No, do you mean the costs of storage is out, or that EDBs are prohibited from providing --

MR CARVELL: Not prohibited, well EDBs are a provider of a line service --

SPEAKER: So they're ring-fenced. They would provide it but --

MR CARVELL: -- if it's a non-regulated activity.

DR GUNN: So this is like the example I gave before, is we would think that batteries being provided by EDBs is evil. It might fit within the definition of the conveyance of electricity by line but we ascribe a zero value to batteries. So that would be one way you could achieve that outcome with the levers we've got. We'd have to justify that within the context of 52A and any other provisions.

SPEAKER: Just to be clear, Calum --

SPEAKER: Look forward to your list of evils.

DR GUNN: That's right, we can have all these things, you spend any money it goes to zero within the RAB.

MR SPENCER: It's not just batteries, though, either is it, you know, that's the example that we're using but we have to make sure that we don't make the mistake and only focus on batteries. What about home energy management system which links the household and controls demand at different times of the day, where does that sit? Is that in the RAB or is that out of the RAB?

DR GUNN: That's the question that we've got the lever over, but to the extent it's actually raising a policy question, the question is should we be making those calls through the choices we make and what goes in the RAB and what doesn't go in the RAB and what value is ascribed to it, or is it actually something that sits better in a structural regulation sense which is effectively more lasting.

MR CARVELL: My concern is you're impacting that decision by -- however you define this thing, you're either saying well we're going to do nothing and leave the status quo and therefore these activities can go in the RAB --

DR GUNN: I think we work with the definitions we've got and then we've got choice as to the levers we can pull within that.

MR CARVELL: Well, we had the conversation about working with the definition. You could flip that either way.

DR GUNN: I think that's right, that's what we're saying, we've got a reasonable amount of discretion there as to what goes in and what doesn't based on how we can justify it. But if you wanted to basically get the same outcome through prohibition, that's a structural regulation question which sits under different legislation. So if you wanted to --

MR CARVELL: Prohibition's sort of a heavy word.

DR GUNN: If you wanted to ban EDBs from --

MR CARVELL: Not ban EDBs, saying it's not part of the line service.

DR GUNN: Yeah, the same, it's set by a competitive market.

MR CARVELL: I'm happy for EDBs to invest in batteries and to market those in a competitive context, you know, EDBs (inaudible) market those in a competitive context up against, you know, Pioneer and anyone else who wants to provide these sorts of services.

MR RUSS: I would define it in a more narrow way, that it's legitimate cost they can incur as long as they only pay that to a third party. Because you still want that revenue stream, so what you're basically saying is --

MR CARVELL: No, I think they can pay it to themselves if they want to as long as there are certain things like transparency.

SPEAKER: They can purchase the benefit from a third party.

MR CARVELL: And then post a price that they'll pay at residence X, Y and Z in a certain area, it might be a different price somewhere else because the issues are different, less compelling. But that for us is posted, you know what the interparty relationship would look like if the EDBs provided the service, or the third party can come in and provide the service at that price.

MR STRONG: So what you're saying is, so you could have like a rule that says the Commission will only recognise opex related to the provision of batteries from a third party or related party? That would solve your problem?

MR CARVELL: I wouldn't articulate it that way, but that might be the outcome. I'd go back to the division and say storage is out. Now (inaudible) storage is out, now EDB go and think about how you'd solve your problem using storage. How would you do that? How does Transpower resolve its ancillary services provision to market.

MS CASEY: But isn't the competition between how much an EDB could pay for a battery themselves and put it on their network and run it and the price that someone would charge them to provide that service as a third party, and how do you know whether that third party price is cheaper than just buying the battery yourself if you're not allowed to buy the battery?

MR CARVELL: Firstly you're not not allowed to buy the battery.

MS CASEY: But if you're not allowed to buy it and stick it on a consumer's house and run it.

MR CARVELL: You're not allowed to include it in your part of the regulated lines service.

MR GRANT SMITH: I think what this gentleman said here is right, if you just regulate the opex side you get the same result, because the unregulated part of the network company has to compete at the opex level and either loses money and goes bust, or it's the same opex. So I think if you just allow the opex cost everyone looks at the same price.

MR COATES: These are structural questions aren't they, I think there's a question around the timing of making those decisions as well, because we are really early days on this stuff, and we're really struggling to think about how these technologies (inaudible).

MR VERSTER: I agree, this sort of conversation will lead to us not taking a chance on these things at all, because why would you because the economic business case doesn't quite stack up. At least now we can test it and see whether it works. If you say you're going to just procure the service from the market, who's going to take that step about actually taking the chance or the risk of investing these things to see whether they work.

MR GRANT SMITH: We've got 13 small generators that run a network which are batteries. If you give me a regulated opex price I might offer the service, you know. So there's no difference with guys with solar offering that service at a regulated price. So that's a much cleaner way of getting like that service.

MR RUSS: So something for everyone to think over lunch. It seems that if the opex would be fine and capex would be bad. I think what people are saying is that if it's in the RAB, the fact that coupled with some other rules about the fact there isn't stranding risk and the return it earns, is that's a guaranteed, in the view of cash flows that others wouldn't be able to access. So it seems it's getting to the nub of the issue here, it's about -- so opex would be fine, even to a third party.

MR CARVELL: If it's transparent.

MR RUSS: If it's transparent, but that's just the --

MR STRONG: A related party.

MR RUSS: Yeah.

MR CARVELL: Ring-fenced.

MR RUSS: That's what it boils down to, that third party could charge on the same basis if it was in RAB, assuming the return that we calculate --

MR CARVELL: I think I'd characterise it slightly differently than opex is good and capex is bad. I think the way I see this is a price out of a market is more likely to give the consumer a long-term better outcome than a cost allocation.

MR STRONG: Assuming the market's going to deliver.

MR CARVELL: Assuming the market's going to deliver. I mean there's a proposition here. We've got to test some of this stuff out, we've got to have the debate. That's the point of this I think is to have the debate.

MS BLYTHE: Which is why I think in terms of -- we used to, in the transmission space, talk about transmission alternatives, and if you're thinking here about distribution alternatives, then the concept of a competitive market feels easier to get your head around that it might be a solution. Now it may be that there are no solutions that are economic and in which case the distribution solution, which might just be augmenting lines, you know, those sorts of pieces can be considered.

MR RUSS: I think what the distribution businesses are saying is putting a battery in a substation is no different to augmenting a line. And then if you start putting the battery past the meter to avoid the line, is that any different. I think that's the tension isn't it. Because you're saying a traditional investment is fine but not an investment in storage basically. I think that goes back to Allan's point about the definition.

MR CARVELL: I think on the issue with a battery is it doesn't have some of those attributes that poles and wires, transformers of technologies do. They're big, they're chunky, they're sunk costs, immovable, all those sorts of things. The battery you can stick it in, you can take it out, you can move it around. So it's much more amenable to people using it in a market context, providing it competitively, than competing on poles and wires. The big battery, conceptually I would say, because as long as Pioneer could have a truckload of those they'd keep rocking up to substations for EDBs and solving the problem for them at a cost, because they have the same characteristic, they're not (inaudible) --

MR STRONG: And we'd be quite willing to do that.

MR CARVELL: -- as pole and wires.

MR RUSS: Yeah.

MR CARVELL: My conversation around the boundary issue is, boundary discussion, the risks just pushing out (inaudible) capturing things which have this different characteristic. They're not sunk costs anywhere near the same standard as (inaudible) asset, ten year asset. They're movable.

SPEAKER: It's more economic to --

MR RUSS: I'm going to draw that for a pause to give everyone a chance to have some lunch. I think, given how interesting this conversation's getting, we'll probably still come back at the scheduled time. So we'll just shorten lunch, if that's alright with you, unless people have got any concerns with that. So there should be some lunch over there and we're due to reconvene at quarter past 1.

[Lunch break]

MR RUSS: What I propose to do for this afternoon, Diego will finish off scenario 3, then I think we've got some prepared comments from Contact and Powerco. We'll do them first and then we might as well have all the information on the table then open it up for the more general discussion and probably pick up somewhat where we left off before lunch. So we'll just let Diego run through scenario 3 and probably holding the discussions for after we've had the other stakeholders and then we'll have a bit of an open forum.

MR VILLALOBOS: Sounds good. So scenario 3 is the one that blends a little bit the first one and the second one. So this is where the EDB owns and controls a battery which is placed behind the meter and this is done as an alternative to a traditional network operate. So it's the same as in scenario 1 but instead of putting the battery in the substation, the battery goes, or many batteries go, behind consumer meters.

So the only difference between this scenario and scenario 1, in terms of the uses of the battery, is that we assume that for the consumer to allow the EDB to install a battery in its house there should be a very clear direct value proposition to the consumer. So we assume that the primary purpose then is to reduce the consumer's bill, that's what the battery's going to be primarily used for. So there might be a contract between the EDB and the consumer where the EDB says "okay, we guarantee that you are going to get a lower bill overall, we will manage this battery to achieve that, and in return you let us put the battery in your house and you pay monthly lease payments".

Then there are secondary uses to the battery. These are the same uses as in scenario 1, but these are subordinate to the primary goal which is to reduce the consumer's bill. If pricing works and it's aligned, then these things should happen all at the same time, but there's a risk that, you know, they don't. So we have a little footnote there that says, you know, the bill savings to the consumer is obviously subject to pricing and to there being a time of use price.

So in terms of the revenues, the EDB receives the revenues from the lease payments from the consumer. He may receive also a quality incentive money from our quality incentive scheme. Then there's also this potential regulated service -- the same as in scenario 1 -- which could be selling ancillary services to a system operator or others. So the capex is incurred by the EDB, they buy the battery and install it, and they get the lease payments from the consumer. The opex is incurred by the consumer and this is just the retail energy purchases. But the thing is this expenditure is lower than it was before the battery was installed, otherwise it doesn't make sense this business model.

So in terms of the regulatory treatment, so the capex first; the battery is used to provide both the regulated and the unregulated service in this example. That's because some of the uses are as in scenario 1, they are delivering the regulated service in a different way. So therefore because it's in, the cost allocation IM kicks in, and we didn't get to look at the cost allocation thresholds. They are in slide 24 if you want to look at them or we can discuss them later if you want.

But the outcome from this scenario is that in terms of capital costs the EDB has to allocate some of them into the regulated service. Same with operating costs. The revenues -- this is where it gets a little bit interesting, because we have these lease payments from the consumer. This is not line charges but it's not unregulated revenue either. So we have this concept of capital contributions that Calum mentioned in the morning. So where we left it, for the purpose of this paper, is that to the extent that these lease payments comply with the definition of the capital contribution, then they could be treated similarly to capital contributions, which is to deduct them from the regulated asset base. You get the quality incentive money which is regulated, we give that and you get the regulated services revenue which is unregulated.

So that's scenario 3. I don't know if there's questions on the scenario.

MR HEALY: Diego, just a quick question on that. I'm guessing this will be some kind of term contract with the household or the provider that you have there if there was a contract or a lease payment. What would happen if the battery failed before the end of that term contract?

MR VILLALOBOS: Good question.

MR GREG SMITH: Same way as any other, if an EDB owned it, same way if an asset fails now you end up disposing it, you get presumably some sort of loss on disposal, and you've got to replace it or put another one in that goes back into your regulatory base.

MR COATES: It just comes down to the contract that's signed.

MR VILLALOBOS: In terms of the contract they are agreed, right.

MR RUSS: I think the thing you're getting at is two things; their obligation to replace it or not will be subject to the contract. The costs, in the short-term their revenue won't change as it's fixed in advance, so they would be out of pocket in the short-term at least.

MR GREG SMITH: But bear in mind, I suppose, for this to be regulated you're saying it has to be put in there by the EDB for the network services, right? So if it fails, then to maintain that provision of network services the same as any other asset we have, we would go through the normal, you know, replacement process.

MR COATES: Can you just expand out a bit on this lease payments and capital contributions concept because there's obviously probably five or six different ways you could have chosen to write that bullet point. Can you expand a bit on that and why you got to where you got to?

MR VILLALOBOS: Yeah. So I mean we could have chosen many different kinds of, well, options here. We chose to require the consumer to pay a monthly lease payment to have to think, force us to think about how that money would be treated under the regime. One option could be that you charge the consumer for the whole battery, that would be like retailing batteries. Question whether that comes off the RAB or is it as in scenario 2 where it's just retailing batteries.

DR GUNN: One of the reasons was really just to raise the question whether it's a good example of how the arrangement would work or not, is that we were trying to think of a situation where our existing recognition of other regulated revenue might have something that potentially falls between the cracks but it has characteristics similar to a capital contribution and it might be difficult to predict in advance, this would probably be less, maybe less volatile; but at the moment the capital contributions definition's very narrow.

So it's a question whether you think about would you want to be interested in treating this revenue as fast money, by forecasting what the other regulated income would be when you're setting prices going forward, or would you want to treat it as slow money by saying it's difficult to forecast. You still have to forecast it in terms of the effect it would have on the RAB, but its impact over time is less because it's only affecting the RAB rather than affecting the forecast of line charge revenue.

The mechanism we've got for that choice at the moment is capital contributions but it's a narrow mechanism. So it's whether something analogous to that might be appropriate for certain kinds of payments around these kinds of emerging technology services.

MS TAYLOR: That's the challenge, Glenn, isn't it, there might be lots of different arrangements, some of which might have the characteristics of a capital payment and some of which may not. So that's the challenges to think about a regulatory framework that can accommodate.

MR RUSS: Is it worth, Calum, just taking a minute or two to explain the difference between how we regulate posted prices and then forecast of other regulated revenue versus capital contributions, like the relationship between those two things? Or are people clear, when Calum was talking about how we need to forecast them in terms of inputs to the way the price control is set, does it matter?

DR GUNN: Well, what it matters is effectively the impact it has over time. So if it's other regulated income we're forecasting when we're setting revenue that's regulated through line charges, it's effectively $1 of forecast income is affecting $1 of forecast revenue going forward. But if you're doing it through forecast capital contributions, that's an effect that is affecting your forecast RAB for the regulatory period and therefore the knock-on effect it has on forecast revenue is through the return on that RAB and the return of that RAB. So it's the impact effectively of that forecast of capital contributions being netted off that value, so it's a much less direct impact.

MR RUSS: The key difference with those things is we're not setting the price limits, the price limits are on the posted prices. So this is other revenue that you get, either in conversation with kind of opex or capex. So it has to be forecast ex-ante.

MR GREG SMITH: But if you think about the fundamentals of it, if it's going to be in our RAB we either recover it through lines charges or if the consumer makes a contribution to it, whether it's over time or upfront, it's a capital contribution, the same as any other investment that we currently do. And if you think about if you do some sort of lease term, right, if all the benefits of that actually go to the consumer, it's a finance lease, right, so it's not even -- it becomes a consumer's asset, right, which is outside of the -- in an accounting sense outside the RAB. But the point being is that I don't think we need to be too worried about that because fundamentally if it's in our RAB it's recovered through lines charges through what you set.

MR COATES: I'm not sure whether there's any other examples at the moment that exist where capital contributions occur any other way than a one-off payment. One of the things when I first observed that to think that you get an annual capital contribution is perhaps a new concept. I'm not sure it matters, but I can't think of an example where we are we get annual contributions for an investment.

MS TAYLOR: There are a few different models. Can I just raise one other point about the quality incentive. I'm not sure there is one here. Because that's not where it's measured.

MR VILLALOBOS: Yeah, this is the debate we had internally.

MS TAYLOR: Yeah.

MR VILLALOBOS: We left that as a may.

MS TAYLOR: Yeah, I just don't -- I think given any of that consequences and where the battery operates, that doesn't fall into the definition in the way in which SAIDI and SAIFI is measured currently. So there is no quality incentive financial flow that comes out of that under this scenario.

MR COATES: I notice at the start of the day we talked about improving reliability, whereas in reality it's probably more about not going backwards. So, you know, you need to make a network investment to maintain security and reliability of supply. If you don't make it it will start to deteriorate. So the battery offers the alternative to hold ground and where you are. There may be cases where you put them in to improve, but probably the mainstream solution is actually making sure you don't go back. So you'd think about the implications of that on the incentive scheme (inaudible).

MS TAYLOR: The other point is if there is a reliability consequence, the way the quality incentive works is over time that just becomes your base level quantity. So the opportunity for the incentive disappears because it's then used to set the base. So that's a short-term.

MR CAIN: There would be a consumer approval though.

MS TAYLOR: Yeah, absolutely, we're just talking about the financial incentive that comes out of the quality incentive.

MR CAIN: Yeah, even if you're preserving the network reliability, when the lights do go out the household with this sort of battery has still got the ability to, you know --

MR COATES: It's just because we're only recording 11 kV (inaudible).

MR CAIN: Yeah.

MR HEALY: I guess on the quality side it's just to see who's taking the risk etc. These are new technologies, they haven't been around for 20 years so we don't know how long they'll last for so who's -- inherently if it's in the RAB then the consumer -- all consumers are taking that risk, who's the best person to take that kind of risk and have that discussion. I don't have an answer, but it's just something about where that risk is put. If you do have things like asset failure who takes that risk.

MS TAYLOR: Risk and reward.

MR HEALY: Absolutely, yeah, understand, risk and reward, yeah.

MR RUSS: There is a difference between failure and stranding though, right. Because effectively the failure one the risk is kind of shared on the EDB. Because once it's deemed to have failed it will be taken out, it will be written off.

MR HEALY: Yeah.

MR RUSS: So unlike stranding assets which aren't, so the risk isn't I think directly read across to -- so in terms of if it fails early, in some ways the EDB is bearing a lot of that risk.

MR HEALY: Maybe it's my understanding, so if it fails early and it's written off, is that not recovered through --

MR COATES: It stays on the RAB doesn't it.

MR HEALY: Does it stay on the RAB or is it -- how does that work?

MR SPENCER: I think there are some interesting consequences, though, of EDBs investing in these new technologies through their regulated asset bases. If you take electric vehicle chargers as an example, if an EDB was rolling out electric vehicle chargers and those formed part of their regulated asset base, well then at the moment I think only a very small number of their customers are likely to be able to access the electric vehicle charger and obtain the benefit from it, but yet all of those customers are effectively paying for it through their lines charges. So there's kind of an equity question as well in terms of how those investments are being shared amongst customers.

MR GREG SMITH: We check this -- every day, right, on lots of issues; urban, rural, there's just so many equity allocated issues associated with it.

MR SPENCER: I think that's a very strong one though because, you know, probably disadvantaged customers are not early adopters of electric vehicles, so I guess the people that are worse off are subsidising those.

MR CAIN: It's interesting isn't it, because this whole thing about risk, you know, the more risk there is, or the less risk there is the more likely some of the emerging technologies are to be deployed, the more risk there is the less likely or the longer it might take. And to some extent there is a bit of, you know, T&D and development to those standards and all those sort of things. It's not to say one way is better than the other, but it does impact on the --

MR SPENCER: No, I agree, there's definitely a tension there.

MS CASEY: The EDB charges are a chicken and egg thing really.

MR SPENCER: Yeah, I agree.

MS CASEY: If the EDB charges aren't there then the uptake effect of EVs is not going to happen.

MR SPENCER: Yeah.

MR STRONG: I don't think there's any distributors out there that are going to spend bucket loads of money on EV chargers, this is token amounts of money being spent on maybe sparking a market. Let's not get hung up on that.

MR COATES: For the overall benefit, long-term benefit of consumer, utilisation of the network.

MR SPENCER: But I guess it's just a question of taking risks not just on technologies but on business cases as well. So I guess regulated entities might have a different approach to that than unregulated entities and the decision-making may not be quite the same.

MR RUSS: Just jump in here if you want.

MR FLETCHER: Yeah, I'll get Andy to do -- he's going to do most of the talking, I'm just going to introduce him.

MR SHARP: Just on that, Calum, with regards to the capital contribution, like obviously the least payment you receive over time, so would you be looking at each time you receive a payment for that to be offset against the RAB, or would it be done upfront or when payment's received, what's the thinking about mechanically how that works.

MR GUNN: I think initially it would be a forecast offset each year against each year's RAB and your information disclosure would reflect what's actually taken off each year in the RAB.

MR SHARP: But you'd credit the asset each time you receive a payment?

MR GUNN: That's right, because if there is an income flow as opposed from a one-off payment, it's still a credit that's going against the value to the extent it's not being reflected somewhere else.

MS TAYLOR: We'll have to work it out during the depreciation.

MR GUNN: The main reason was to just note we have different mechanisms for dealing with incomes, and it's just to say this was really, to the extent it's contrived, is just to get the issue out there so we can get the -- think of some examples where you might want to use a different mechanism rather than through line charges or forecasting other regulated income, that's all.

MR NICK WILSON: Can we just come back to Simon's point that we were talking about before around if an asset fails early or, you know, because we were opining on that whether it stays in the RAB or not. Did we get clarity on that?

MR GUNN: Yeah, correct me if I'm wrong but I think that's a disposal, so that comes out of the RAB. Whereas if it's a stranded asset it's effectively -- it's economically or physically stranded, it's not used and it still sits there in situ, that's a stranded asset and continues to remain in the RAB. So slightly different treatment.

MR RUSS: I think, you know, to explain the whole story you really need to understand how the pricing path is set and works. So you're setting revenue in advance, assume how much capex will be spent and what the RAB value will be, and then if during a period that revenue stays unchanged regardless of what happens, but if an asset fails it will be written off, it will be picked up in information disclosure, and then at the end of that period when you come to set the next price path the RAB will be lower than what it was assumed last time.

So effectively from the point of view of that asset, they haven't got a stream of cash flows that's effectively paid for that asset. It's been failed early, written off. But then going forward, if the capex required to replace it is forecast, that could be captured in the path going forward as well. But it is their loss depending on how much asset is remaining if in a period it fails.

MR SHARP: So they wouldn't get any relief from that until the prices are reset in the next regulatory period.

MR RUSS: Yeah, the relief would only be to the extend it, there would need to be further capex to replace it, they wouldn't get relief for the foregone return on and of that never occurred to that asset because it fails before the end of the assumptions about its life.

MR SHARP: Okay.

MR RUSS: Now I hand over to Powerco for a conversation about a few observations including electric vehicles I believe or charging stations.

MR FLETCHER: Yeah, it's quite a short presentation and it's quite ironic that the technology's defeated us so we haven't got handouts or a presentation. But look before the Commission's paper came out we were looking internally as part of our business planning around how certain activities will be treated going forward. And we were really focused on electric vehicle charging and we were looking at different scenarios. So we sought some advice from Chapman Tripp -- this is before the paper came out -- on whether or not certain activities beyond the point of supply and on the network side of the point of supply would be treated as regulated services.

So I'll go on to what the three scenarios are now. We were really focussed on Chapman Tripp's advice, on limb 1, not the allocation. So it's probably not going to inform -- we discussed a lot of it today, so what we say is probably just reinforcing what was said this morning.

The three --

MR NICHOLLS: I'm not an expert on allocation I think is one of the --

MR FLETCHER: Yeah, but it does -- I'm going to spoil your thunder, but the conclusion we got to kind of is part of what the Commission came out with and supports the limb 1, and limb 2 allocation's a separate issue.

The scenarios were first of all providing an electric vehicle charger on a consumer's premises, and that was for the purpose of demand side management. So if it was owned by Powerco and we provided a charger to a customer and we had a contract with that customer to allow us to control the charging frequency, if there was a cluster of EV take-up in a certain area of our network. So that's a definite benefit to the conveyance of lines services, but the asset was on the customer side of the point of supply and owned by ourselves.

The second one was addressing the issue, which you'll hear the Minister talk around, is having addressing range anxiety. So that was around in terms of promoting the uptake of electrical vehicles more generally. And it was around partnering with local authorities, retailers, NZTA and actually providing electric vehicle charging unit on the roadside, for example, and how the asset will be treated not as distinct from the retailing services. And it comes down to the, there may be a bundled charge for that with a retailer and the network owner. So that was the second one.

The third one was partnering with a third party on, say, a supermarket or a garage, for example, in terms of us providing the asset and the lines services to that point and then partnering for the retailing and the provision of the service.

So they were the three scenarios. As I say, we haven't looked at allocation, we haven't looked at where the value lies etc, it's just really around flowing the statuted provisions, how do those scenarios map against that convoluted process that Susannah talked about, and I thought it better to get Andy to do it than do it myself.

MR NICHOLLS: And in the end we didn't have a lot of new stuff to say from what Susannah's already covered. So we agree very much with the two limb approach that the Commission slides have taken you through. So the first limb being working through the definitions of the regulated service itself, and the second being the question of being used.

As far as EV charges go, probably again we worked through the definitions and ended up very much like Susannah's diagram that I took you to earlier. The key question was the point of supply. I think probably the one thing that we grappled with a little bit more is that the location of the point of supply can be varied with agreement with the householder. I think the lines businesses here will be more familiar with that concept, where you can agree -- say with the traditional service line, you could agree, not being the boundary of the property, it could be the point of a house or whatever.

So the question there was whether you could agree with the consumer a change to the point of supply, which would then change the definition of your network boundary and whether that would mean that you might have your electric vehicle charger, depending on the scenario you're looking at, on either side of the point of supply. So you could have a residential customer with your EV charger in the garage, and in one house you might have struck an agreement with that householder to agree that the point of supply has been shifted to, is it the downstream side of the EV charger, and in the very next household you might not have struck that agreement with the householder. So we just ended up grappling a little bit with that.

MR FLETCHER: Or actually agreeing a second point of supplying.

MR NICHOLLS: Yeah, yeah, and it's not out of the question, I mean you end up just dreaming up scenarios, and it's not very easy to pick how this might all travel. But you can imagine if you're a network business putting kit in somebody else's garage and you're, you know, spending a lot of capex then you might end up wanting to have at least some kind of agreement with the householder as to who owns this stuff, what happens if it gets damaged, so you're going to end up putting a bit of paper in front of them. So it's not out of the question that you might end up, in that contract, agreeing where the point of supply might vary.

So grappling with that as to what that does with our two stage attack here on, you know, your first question of what is the regulated service of conveyance of electricity by line where you track through to the point of supply boundary of the network, and then second question what's used to supply that.

So that was probably one, not a gloss, but an extra point of detail that we drilled into. I suspect where that might take you to, Calum, is that exchange we had earlier. So if you've got your household where you have struck the agreement, where the point of supply has shifted such that the network boundary has shifted and so the statutory definition of the regulated service has flexed and it covers your electric vehicle charger, then at that point at least your piece of kit has been included in the regulated service 100 per cent, it is part of the regulated service, before you get to the question about what's used to provide the regulated service the network boundary has moved. And that might put you to the test if you wanted to not include 100 per cent of the asset value or the costs or whatever, that might put to you your test of just saying we're just not going to include costs or asset value for other reasons. So there's something to be exploring there I think from earlier.

Then the second limb, again which we didn't really drill into, which is just the used question. So having defined your regulated service of conveyance of electricity by line, then asking the question what assets or costs are used to provide that service, is it the Chief Executive's chair, if it's an EV charger that's beyond the point of supply, is it in some way used to provide the conveyance of electricity by line and in what proportion, all of that stuff, you know, we just covered exactly the same ground. So it was in that first part of the analysis of really grappling with the statutory definitions that we -- so that was really the point of detail.

On the three scenarios, again, it's the same framework used for the three scenarios. Outside of the residential scenario when you're looking at the roadside or the forecourt, my property lawyers tell me it all gets a little bit more confusing around where you identify the point of supply on the roadside or the forecourt, it all gets sort of tangled up, and whether you've got an identifiable party and installation and so on. So it all gets a little bit more legally complicated there, and as you can see I'm glossing over it because I didn't want to drill into that. But it's the same kind of analysis which is you're looking for that definition between electrical works, which take you up to the boundary and the installations beyond, it's just that that boundary's a bit fuzzier on the roadside and the forecourt.

MR FLETCHER: That was --

MR NICHOLLS: That was it.

MR FLETCHER: That was it actually.

MR NICHOLLS: So I guess the only thing new that I've sort of thrown into the conversation there is this concept that the boundary at the network might flex, that the point of supply might shift. In the old world it could be the lead in from the network through to the house where it stopped, you know, if nobody does anything it stops at the boundary of your property. If you want the electricity company to take responsibility for that line all the way to the house you can, by agreement, shift responsibility for that and the network entry shifts.

MR FLETCHER: Would you automatically then capture installations and appliances and anything from the boundary to the garage?

MR NICHOLLS: No, because they're defined by definition of what lies beyond the point of supply. So they --

MR COATES: My observation about this is there's no way you can shift the point of ownership without incurring extra costs to deal with safety issues and just the simple fact that you need the isolation devices for things like fire and all the rest of it. So it doesn't really pass the long-term interest of consumers test where, you know, you're basically using a definition in the rules and finding loopholes to get an outcome that suits. So it's a little bit convoluted.

MR NICHOLLS: Yeah, I mean I wasn't sure --

MR FLETCHER: (Inaudible) service line, (inaudible) service lines as well to be on the point of supply.

MR SPENCER: I just wonder what's the end game in terms of getting electric vehicle chargers -- is this what we're saying, getting EV chargers inside the RAB?

MR FLETCHER: The end game on that particular -- this is not something that we're actually doing, it was demand side management.

MR SPENCER: No, no, just the thought, you know, the process.

MR NICHOLLS: Yeah, so recognise --

MR SPENCER: Okay.

MR FLETCHER: It was particularly -- and again, that's why I think it does tie in with the second limb because it would be incumbent on a network company to demonstrate exactly what value the network was getting through its allocation.

MR SPENCER: Because currently networks set tariffs which effectively manage demand through price signals, so I think Wellington Electricity have come out with an overnight -- is that right Greg -- overnight tariff for EV charging?

MR GREG SMITH: Something we're looking at, yeah.

MR SPENCER: So you're effectively managing --

MR FLETCHER: It would be a combination of the two.

MR SPENCER: Yeah, yeah.

MR FLETCHER: I don't think -- it wouldn't preclude us from doing that.

MR GREG SMITH: What it comes down to, though, is again back to that definition of lines services, right. And so if there's any sort of legal doubt about that that's got to be legally answered I think to give absolute clarity to it, because then once you get that then you're looking at saying well what's the difference between a bit of charging station infrastructure that either sits on the customer's driveway or in the garage or on the street, right, up to a point where someone's going to provide a meter, right, to charge that electricity.

But the physical infrastructure of that, what's the difference between that in terms of being necessary to provision supply versus a pole on the street. I'd argue they're kind of exactly the same, aren't they, up to the point of supply, which in that case might be the meter in that infrastructure. But it's a legal question I think that just needs to be completely clarified as to where that --

MR NICHOLLS: There's a couple of very practical questions lying in there, right. So certainly it's a legal possibility that the business and the customer can agree a shift in the point of supply. The practical questions are, whether that's feasible to go around and get everybody to sign a bit of paper, right; whether it suits the lines business to take responsibility and shift the point of supply. So all we were flagging is that it's one -- you could imagine at least a scenario where that happens, particularly if the business, you know, has already got its head around the fact that it's going to go out and talk to all these residential customers because it's about to put some expensive kit in their garage, it's going to get them to sign a bit of paper anyway. You could imagine that happening.

MR FLETCHER: The other thing I always think, it comes back to a technical -- I'm looking at Ryno -- as to where it's best to manage that demand, whether it is better to do it from someone's garage or up further on the network. That wasn't the question we were trying to address, it was if you did have that, how would it be treated from --

MR SPENCER: I was thinking, you know, obviously every 3-pin plug is an EV charger, so to what extent are 3-pin plugs in the RAB, and then where does it stop.

MR NICHOLLS: As I understand it what that highlights is, you're right, so if an electric vehicle doesn't have anything other than just the 3-pin plug, then that creates the potential problem for the lines business because everybody who gets home at 6 o'clock just plugs in their cars at 6 o'clock.

MR SPENCER: Yeah, sure.

MR NICHOLLS: So if the lines business, taking that as the status quo, if the lines business then wants to put an additional piece of expensive kit in the garage to be able to control that a bit better for lines management purposes, that then generates the conversation.

MR SPENCER: Yeah, so, sorry, where I was going with the tariff discussion was the tariff effectively incentivises the right behaviours. So if you want to charge your electric vehicle over the peak then you see the peak price. I don't see anyone should be telling somebody when to charge, when they can or can't charge their electric vehicle, it's just a question of how much money you're willing to pay to do it at a convenient time. So we shouldn't be making these --

MS CASEY: EDBs don't have much control over that though.

MR SPENCER: No, but we shouldn't be making these decisions for customers.

MS TAYLOR: But that does have an investment consequence for the lines business.

MR SPENCER: I know, I fully appreciate that and customers should pay for that, there shouldn't be any freebies here, but it's about how you do it.

MR NICHOLLS: On the customer choice point, though, I mean I think if I've got the technology right -- I'm a lawyer so I probably haven't -- but again, taking that example of it's going to require something more than just a 3-pin plug to have that effect, right, you will have had to have got the customer's consent to put the thing in the garage in the first place. So if their default option is to just come home at 6 and stick the car in --

MR SPENCER: I think to access particular tariffs you have to have a particular meter and configurations on special circuits, so you'd have to -- so that would achieve the same outcome so, anyway.

MR CAIN: At some point you're going to have their consent I think is the -- and they will have either chosen or not I think is my --

MR RUSS: What if the kit is in the car?

DR GUNN: Yeah, this is a really important point.

MR RUSS: If it's a bit of software that controls, or is controllable, where would that take you?

MR COATES: It's the consumer's, right?

MR HEALY: Is the question we're trying to ask here whether we should be creating market outcomes, which is prices and yes, there's some uncertainty in market outcomes, or is they're regulated outcomes for these types of pieces of equipment? Because ultimately theory would say market outcomes are going to lure the best thing for the consumer, but there might be some perverse things happen where you can't get 100 per cent reliability if you do that and you've got to, you know --

MR SPENCER: Yes, I think that's a really great example you guys have gone through, but I guess for my money I think you get a potentially fairer more competitive outcome if -- network companies can own chargers in people's garages, that's fine, but that should be behind a ring-fenced entity where everybody can compete to provide that EV charger in that person's garage on the same basis. So third party technology providers can do it on the same basis as you guys, so we should all be out there competing for it on the same basis.

MR COATES: I guess the position some of the EDBs are in is this stage is about keeping your options open, and there's a certain amount of need for R&D in these areas, and is the free market going to do that, are they going to struggle. We're in a good position to have all the information at our fingertips, understand where the benefits will come and we can play around a bit and get things happening. Then it might be appropriate that next IM review or some mid IM review we have another look at it and see whether we need to move. But I think EDBs are in a strong position to actually get this thing going, get things started --

MR FLETCHER: I agree with that.

MR COATES: -- and get some technology out there and see what the benefits are and costs and what the issues are. I don't think we should lose sight of that. I think the market might struggle just to get started.

MR FLETCHER: And that's why these scenarios came out, because they were trying to test the impact of that and whether we could control it and whether it was feasible. But I guess you wouldn't want to be inhibited from that innovation.

MS TAYLOR: And that's consistent with 52A, the innovation.

MR RUSS: I was just going to ask that question, it's innovation for consumers of what, though isn't it. So I think Glenn makes a good point. If you, you know, it's sort of gone off the table a little bit now, but the last few years people talk about spiral of decline, you know, whoever's left on the network paying higher prices. You can imagine it's in -- potentially it's in everyone's interests to get critical mass of EVs on the road if it means that the throughput will lower the transportation component of energy that people consume by increasing volumes. So I think, I guess backing up what Lynne was saying, you could see how you could get there from 52A in terms of how this innovation would be to the long-term benefit for consumers of line services. Thanks Richard.

MR NICHOLLS: I guess the other thing that's at play here is apart from just the who's going to get this started, the experimentation, it plays into that a little bit. I'm very conscious when the business comes to us, by the time the business comes to us the lawyer, one of the things they're after is just "what are the rules of the game, what's the regulatory certainty here, I'm trying to get a business case signed off by the board and I need to know, and I'm putting a little bit of my career on the line here in fronting the board and saying look, it's going to play out this way".

MR FLETCHER: You're not eh.

MR NICHOLLS: You are, yeah, I'm --

MS BLYTHE: He's being a good lawyer in your shoes.

MR NICHOLLS: And so that's also at play here too, right, which is the extent to which if people aren't -- the extent to which we're going to weight regulatory predictability and certainty and resist the temptation to be overly purposive with our, you know, adventurous interpretations, even if we might not like every outcome, because we all together value a bit of certainty and all have a bit of empathy for Richard when he needs to front the board and say "I'm pretty confident this is the way it's going to play out". So discussion papers help, but also, you know, suggestions of adventurous interpretations don't, and that's also here in the mix too it seems to me, in this area where we're trying to get everything off the ground.

MR STRONG: Why do you see EV chargers as being important in this discussion in terms of getting that in the RAB? Because to me it's a bit like a service line, something quite peculiar to each customer, I'd see sparkies probably mostly providing that service because it's stuff in the home; they're good at that, we're generally not.

MR NICHOLLS: Are you asking me as a lines business?

MR VERSTER: Yeah, shall I try to answer that. I think what we're talking about here is, it's really the only party that benefits this is the lines company, there's no commercial benefit to the consumer to actually have this charger in their house. As we said before, a 15 amp plug can do exactly the same job. So you're talking about a device that actually allows you to defer that peak that happens at 6 in the evening, and it's only the lines business that benefits from it. So it's not a commercial market, it's not something the electricians would want to go into houses and sell.

MR SPENCER: I think it's too early to tell what the market's going to do, I think there could be any number of business cases that evolve around electric vehicles and mobile ICPs. So I guess my concern would be we're all in favour of encouraging the uptake of electric vehicles and we applaud network companies who are investing into electric vehicle chargers and looking at innovative ways of doing that. But I guess the danger is, is that they somehow find themselves down the track in a privileged position in terms of one of those future business cases that we're not aware of at the moment because of their ability to leverage their regulated business, all the issues that we've talked about before. So I guess it's --

MR NICHOLLS: Is it possible that you're both right? Didn't Ryno just explain what lines businesses might want to do and the reason they might want to do it.

MR SPENCER: Yeah.

MR NICHOLLS: Which was that 6 pm peak. You just explained that other people might want to do something different or the same thing for different purposes in the future.

MR SPENCER: Yeah.

MR NICHOLLS: The question is whether you want to hold off the lines businesses for doing what they want to do, why they want to do it, as they find their way forward, for the hope of future market activity.

MR COATES: Rules can adapt over time.

MR NICK WILSON: There's a third possibility that's got nothing to do with us, as Nick pointed out, the car manufacturers just put this technology in and, you know, what we do is kind of irrelevant really, so --

MS TAYLOR: But Ryno's still got his 6 pm peak he's got to deal with.

MR FLETCHER: Still got to -- I'm not sure he’s going to do that alone.

MR NICK WILSON: No, I'm saying the vehicle can do that. You don't need a special charger, it's just software that's in the car.

MR SPENCER: Enernoc might come along and roll-out EV charges across New Zealand and aggregate the demand response and sell it, or their competitors, I don't know. So, you know, there are lots of --

MR RUSS: Is that sort of saying, if you look at EV -- Ryno's point is it's no different to ripple control. If ripple control didn't exist and happened to be invented tomorrow, would we say the same things about it? Would we say, you know, we have to be careful about this, we have to weigh, other people might -- third parties might come in. If it's purely driven by the distribution network finding a way to do demand side management to avoid capex, what would be the rationale from precluding them from doing that if that's their motivation?

MR SPENCER: We're not proposing that anybody's prevented from doing anything, it's just the terms on which everybody's allowed to do everything. That's the only point.

MR HEALY: I guess what we're saying is that others can do that service as well, others can do those things, they are competitive markets and --

MR SPENCER: They should be able to do it.

MR HEALY: -- so how do we set up the platform to ensure we can have those competitive markets, and that others from outside can also perceive the right price signals, the right understanding of the economics so they can compete on the same basis.

MR CAIN: I think as a principle that's absolutely fine, right, in relation to who puts the plug in the garage I think it's a -- you know, anyone can build a transmission line or a distribution line as well, you know, we do contract to parties doing that.

MR SPENCER: Yeah.

MR CAIN: It's a question of whether it's good to say EDBs can't do this because someone hypothetically might want to do this in future, as opposed to well it's a good thing to do and if they want to lead it and the network benefits there to justify it and, you know, that's fine. It's a bit like your light bulb example earlier on, if the distributor's doing it for network deferral benefits then it doesn't really matter who's putting it into the house as long as it's getting there.

MR NICK WILSON: Would you do it if it wasn't in the RAB?

MR VERSTER: No, we'd probably put a line to double up the capacity in the street, which is the worst outcome possible.

MR CAIN: Yeah, that's probably not the right way to frame it, because what you're saying there is would you incur a cost you can't be compensated for. That's the way the price path works, and no-one's going to do that.

MR RUSS: They might do it if they get opex, right, so it's not about being in the RAB.

MS TAYLOR: Yeah, exactly.

MR RUSS: It's about cost recovery.

MS TAYLOR: Yeah.

MR SPENCER: But surely it's a tariff-setting question isn't it, so you charge --

MR VERSTER: I agree, I think part of the future business cases might lie -- it just seems to us, and this is today's knowledge, the price signal we can send is probably not going to be strong enough to incentivise the behaviour that we want.

MS TAYLOR: That's right.

MR VERSTER: So we probably will still be forced to have some physical means in there, with a contract signed and everything, if we really want to defer or not having to reinforce the networks. But that may change.

MR COATES: Alternatively the price level actually is strong enough and you get such a response to it it becomes a problem.

MS TAYLOR: Yeah.

MR COATES: We've had this problem.

MR VERSTER: You get 11 pm peak customers.

MR COATES: We've had this problem with hot --

MS TAYLOR: With hot water, yeah.

MR GRANT SMITH: Isn't the cause and the solution the same thing? So some group of consumers come along and have a very high peak, they need a battery. So the irony is the thing that has a battery needs a battery. So instead of putting a line in, you penalise him by making him buy a battery for his peak. It seems like --

MR STRONG: That may not be the most efficient solution.

MR GRANT SMITH: Well, it is, otherwise it's a line for the street. Whereas if this guy's got a vehicle that's causing a huge peak, well he can buy a battery off you.

MR CAIN: But isn't the point that people come home, plug the car in, go and have their dinner, they don't care whether the charge is at 6 or 8 or 10 pm.

MR SPENCER: I think they do if you're sending them a price signal.

MR CAIN: Sorry, yeah, no, that's absolutely right, if you get the pricing level right --

SPEAKER: We do, we offer an off-peak.

MR CAIN: -- you know, people try to get price signals right in this sector for a long, long time and so far failed, right. It's not to say it can't be done in the future.

MR SPENCER: Yeah.

MR CAIN: But, you know, you have to be make some pretty heroic assumptions about the whole lot of ducks getting lined up quite quickly before you'd say let's not bother with worrying about what's going in homes.

MR COATES: Appreciate how complex it can get. If one electric vehicle per household -- and there could easily be two, very, very long-term -- one electric vehicle per household will completely fill the overnight trough in the Orion network. So that's if you could completely manage the exact time that each electric vehicle charged. So the minute you start getting three quarters or half of them charging at the same time because of the price level, you're now creating a peak at night that is way higher than the day one.

So it actually has to be managed very -- it's not just about -- it's a completely moving price feast. Get away from price, contract for service, and give them the outcome and then have the ability to control each individual line.

MS CASEY: It's not a very prudent way of managing the network to rely on individual's behaviour either, you know, that's a lot of reliance on what suddenly a lot of people are, you know, that they don't need the car charged until the middle of the night or, you know, they're not planning on going out again, or they don't have something that they need to get washed and dried in a hurry or all of those things, to rely on people's response to price signals to manage a network is --

MR COATES: Because the aggregated effect, that's why we have demand side aggregators because all that risk gets managed in a package. You know, we've got away with hot water cylinders over the years because we know what people do, they've shown us what they do for 20 years, so you can predict it with some certainty. You can't predict what that house will do, but you can predict how they will behave holistically.

MS CASEY: If you've got control of it then you can (inaudible).

MR RUSS: It's getting a bit -- we'll just get this a bit more ordered. So Gillian and --

MS BLYTHE: Thank you. Can I just ask a question -- it's going back to the double playing field and I hope it's not going over the same sort of ground but it's from a different angle. So I want to put an EV charger in and it's somewhere on the street, and you look at it and you think it's going to be a busy place, it's going to be used a lot, okay, I need to do some investment behind to support it, so let's just say -- because sometimes it helps with numbers -- it's going to cost me 20 to put it in, but you need to do some network support and that's going to be another 20.

If you had an in-house EV charging station business within the EDB, 20 to put the same thing in, because we've just both got it off the open market, are you going to charge the in-house business the 20 as well, or are you going to say actually I can manage that through some other ways because I'm quite crafty, am I going to be employing my team to think craftily because it's my money rather than Gillian's EV charging business money; it’s how that gets treated. I guess that's sort of the level playing field in terms of network support. I don't know whether you're smiling about my thinking everyone's crafty, but I just --

MS TAYLOR: I'm not sure why you'd put it in that location.

MS BLYTHE: No, it just might be the most sensible place it's going to be, because if I want to get people charging they've got to go past it, otherwise they're never going to be there. So, you know, let's just say it's a sensible place to be putting EV charging.

MR RUSS: I think that's just a question between shallow and deep connection charges in some ways, isn't it.

MS BLYTHE: Yes, so is it going to be a level playing field between an in-house business -- which is the question about ring-fencing and arm's-length -- as to whether you will be charging the third party competitor the deep but only shallow for the in-house, because if it's different treatment then it's not a level playing field.

MR RUSS: That's sort of an interesting variation on this morning's conversation. This morning we were sort of asking for transparency about the value to the network in terms of putting on a battery, now we're talking about if there's upstream reinforcement, is it transparent that everyone would have to pay or not to have the upstream reinforced when undertaken by the EDB given what they are putting on the network at the lower end? I think it really goes to how distribution businesses charge for upstream reinforcement and how deep, you know, we'll have a charging methodology around this, or capital contributions which is usually how deep reinforcement is dealt with. It's another interesting thing.

I think it adds to further examples of potential concerns. I guess the EDBs would probably say, you'd hope they would want to do the lowest cost thing regardless of input, no-one would wants to see money wasted on a network that's not needed, so if that solution was available to themselves why wouldn't it be available to anyone in terms of minimising the cost in the network.

MS BLYTHE: But sometimes it might just be about how it is for the individual. If Richard's going to the Powerco board and saying "I want to do this, this and this, don't worry I've worked it out, I can manage it"; but if it's a case of, you know, Gillian's going out and saying "Powerco please can you give me this offer", you might not have to, you know, you might not bother to do the extra bit of work. It's just that sort of question about level playing fields. Just in the same way we used to have it around, you know, I want to connect a generation plant, you know, a small one and it's Part 6 of the distributed generation regs, that sort of question.

MR RUSS: I guess it's kind of an access question.

MR PARRY: I don't know if this is right; the EDB can't avoid the full depth of the cost, if you like, or is the amount that the EDB could allocate to the third party's got to be less than the full depth of the charge, if you like, so the level playing field goes the other way.

MS BLYTHE: I don't know.

MR NICHOLLS: I must admit to not having completely followed this scenario, Gillian, so have you moved out of the garage and on to the roadside?

MS BLYTHE: Yeah, totally, I'm --

MR RUSS: Nathan's been patiently waiting as well, so we'll have one more comment from Nathan then we'll --

MR STRONG: It just feels to me like we're kind of a little bit down in the weeds now --

MR RUSS: Yeah.

MR STRONG: -- talking about these quite specific scenarios of where charges are and so forth. I wonder, we still seem to be coming back to that same point of -- and I think in the break I talked to Gareth Wilson, just raised a good point about this a discussion about, in some ways, unbundling the potential services provided by EDBs, and whether we feel like it is in some way -- whether it's through the IMs or whether it's through some sort of structural regulation -- necessary and desirable to create competition in new markets. So what about a market for maintaining the networks. We have that in some networks and not in others. We could have markets in the provision of battery services to networks where they've got capacity constraints, or we could have the network, you know.

So then it's just a question of what are we gaining from these possible new markets versus the existing approach. And there's potentially a whole lot that distributors would be giving up if they were forced to create markets, where you said okay if we want to relieve a capacity constraint in this area through the use of batteries, then we've got to find some suppliers that are going to do that and they're going to have to go out to the customers and find ways to contract with those, versus is it better just for a small dedicated in-house team within the EDB, knows the region well, knows the customer base well, can use different solutions to achieve that same objective, is that more efficient. So I think that's sort of where I think the conversation needs to, in my view at least, head to. But we are dealing with some issues about kind of the boundaries of competition and regulation.

MR RUSS: These markets, it's not entirely clear what they may look like in the future, and I also had a helpful lunch time conversation with John about, are we talking about transition measures now or the end game. Like if we don't really know where this is likely to end up, you know, the IMs are there to promote certainty to a certain extent, but they are reviewed at least every seven years. So given what we know now and the uncertainty we're faced with, are we thinking about an enduring solution for all these potential markets, or are we thinking about a transition, or are we thinking about wait and see until we know more.

I think that's just -- in the context of all the conversation we've had today sort of, you know, like Nathan said, pulling it back up a level and saying what is it we need to put in place now. I think, you know, there's probably hearing particularly from the EDB side about the benefits of why these markets are emerging, you know, do you want to risk stifling them first, allowing some innovation to take place; and then if there's any competition concerns down the track, is there other mechanisms for dealing with them, could be one option of approaching it.

Or the other option is just the risk or consequences of these markets being not perfectly competitive from day one, it's not worth the risk taking and we should very much protect the fact that it's fully competitive from day one. I think they're just two alternative views you could have about what's in the long-term interest of consumers, and get back to the test the Commerce Commission will apply and this is the consumers of lines services, that's very much what we focus on.

MR STRONG: There's also, I think, a question of are there incentives in the system already that might push you in the right direction. So, for example, we have a suburb in Hastings where we've got a capacity constraint $3 million investment to relieve that constraint using conventional solutions. We looked at some substation battery storage solutions and also we've got some prices from manufacturers around putting batteries in homes. So that's going into a competitive market, so we're approaching different people to provide those solutions to us.

Now if it so happened that Meridian was in the business of aggregating customers, they had a battery business and could provide that sort of co-ordinated approach, and we knew about it, then we'd probably go and talk to Gillian, people within Meridian. Because if they could deliver us a lower cost, potentially because they can leverage some of the benefits into the wholesale market of having batteries, then why wouldn't we do that under the regime where we're incentivised to reduce costs.

So there are actually some system drivers already in there but at the moment we've got the flexibility to choose between out-source or in-source.

MR RUSS: I think from what I'm hearing particularly from the retail side, that I think people would accept that for a pure EDB it's providing the lines service. I think the problem gets if you started playing in both markets, if you wanted to also like potentially Meridian build a business around batteries and arbitraging and those sorts of things and tapping into the benefits on the distribution side. So I think it's when there's a role on both sides it probably gets more -- the incentives probably aren't as clear. It's just for a pure EDB that I'd like to think under our regulation would have an incentive to minimise cost in terms of delivering the output.

Probably good, I think is it -- who's speaking from Contact?

MR SPENCER: Me.

MR RUSS: Yeah, probably a good segue into your guys comments. I might take Richard out of my seat --

MR FLETCHER: Going to observe again.

MR RUSS: Thanks Richard.

MR SPENCER: Thank you very much to the Commission for setting up this workshop today, I think the discussion so far has been fantastic and is really great, I think, to get all these different points of views aired. And I'd thank also again the MBIE and the EA for attending as well, because we think that it is absolutely critical that there is a co-ordinated pan-agency approach to what, I guess, we think are pretty landmark issues for the industry and, I guess, for our customers.

So we're here advocating on behalf of our 565,000 odd customers and we're advocating for them to ensure that they have a range of choices in the future around where they purchase their energy services from. And, you know, as I said before, I think those customers, they're the people that are going to make the decisions in the future around how they purchase their services. I think our role should just be to make sure that there is as much competition in the market as possible for the provision of those services.

I guess you talked around some of the choices that we face at this point in time. Do we look to leave the rules as they are and say okay, there might be a bit of an unlevel playing field, but that's good because that's going to let EDBs get on the charge and innovate in this space, you know, perhaps leveraging the unlevel playing field. But I guess my answer to that would be that okay, that is probably correct, that EDBs will innovate in the space, but I think you are encouraging EDB innovation at the expense of everybody else's innovation.

I guess with all due respect I think there are probably a lot more competitors looking to enter the space in the future than the incumbent EDBs that we have in New Zealand. You know, I think this is potentially a very huge space for third parties to enter into in New Zealand and compete with a whole range of business models that we haven't even seen yet. I guess I'm fearful that if we make that decision we're going to cut that avenue off for the detriment of all of our customers and all of your customers as well. So I don't think that that is something we want to do.

So I guess our point of view on all of this is that all of us in this room should be trying to make as level a playing field as possible to encourage competition for all of our customers and we need to be doing that now. I think Andy made a point around uncertainty of regulation. You know, I think that uncertainty in this area is a barrier to entry, it's a barrier to investment. So EDBs are grappling with whether or not they should put EV chargers in because they don't know how they're going to be treated from a regulatory point of view. I guess I've got a lot of sympathy for that, we're in the same situation, we've got a lot of uncertainty around the investment in these new technologies ourselves. So, you know, those business cases are hard to pull together. But it's certainly something that we are looking to pursue.

And I think if you're in an environment where there is a great deal of uncertainty that's not helpful and ultimately that's not helpful for customers. So I think our job should be to make the regulation as certain as possible as soon as possible, and we need to make the playing field as level as possible.

So I guess that's what we were thinking when we came up with a couple of alternative scenarios. The first one, I don't know if you picked up the A3 sheet on your way in. So we had two different scenarios. One is probably slightly more radical and less palatable than the other. But the first one saw EDBs free to compete in these new technology markets. So we've used batteries, I think, to follow on with the Commerce Commission's example. So EDBs would be free to compete in these markets, as they should be, but on a level playing field basis. And I guess the key feature that we saw would be utilised to achieve that was ring-fencing of the EDB-owned entities that would invest in these technologies.

The third scenario, which is the more radical scenario, and I guess it kind of hinges on an assumption or a proposition that perhaps the regulation of EDBs competing in these new technologies leveraging off their regulated businesses is inherently complex and difficult and perhaps impossible to regulate on a fair basis given the huge complexity around these new technologies.

I'm sure the Commerce Commission has done some pre-thinking around how it would allocate costs around a battery, for example. I think it's, you know, hugely difficult when you're looking at the multiple income streams and markets and all of the inherent uncertainty around all of those incomes and markets that these batteries can realise. So I think it's a hugely challenging task to come up with cost regulation that will be effective for these technologies, just given their inherent complexity.

So I think they're pretty self-explanatory, we're happy to field any questions that you might have. I guess for us, in addition to the overarching objective of achieving a level playing field, you know, we were looking to, I guess, target four other key features, and that is to deliver market efficiency. We think that contestable competitive markets are the best structures for delivering market efficiency.

The information asymmetry point we've already talked to about a lot I think today. We are very concerned around our ability to see what investment decisions network companies have to make in the future. We don't think that the current capex disclosure regime is sufficient to send through sufficient investment signals for third party technology providers who would want to invest in these new technologies. So we think that third party technology provider competitors will be at quite a material disadvantage in that regard under the current regime.

Ring-fencing is obviously critically important for achieving a level playing field. We think that the Electricity Industry Act already has some very useful ring-fencing provisions in there which could perhaps be utilised. And again, competition, that's the, from our point of view, the single most important measure of ensuring that our customers have as wide a possible range of service choices at the fairest possible prices. And I guess it also is, you know, the main point of the Commerce Act as well to promote competition for long-term benefit of customers.

So I guess those were the points that we were trying to hit. Happy to have a discussion.

MR RUSS: I'd be quite keen to hear from the distributors in particular about your views about pros and cons about the ring-fencing, how you'd see that, what issues, if any, it would cause, or observations of what it would mean in practice and how, if at all, your behaviour would differ under a ring-fence compared to what you would do if it was the status quo.

MR VERSTER: My question to a degree, is your concern about us competing in the competitive market, or is it about putting an asset in the RAB which we procure from anybody else?

MR SPENCER: We were talking over lunch around how it might work in the future, and that is if you wanted to purchase demand management services, then I guess in our view the most efficient way for you to achieve that and therefore the most efficient outcome for customers is to make that service fully contestable. So third party providers should have the ability to provide that service to you.

You know, we acknowledge that lines companies when they're procuring services or hardware for the installation on their network, they're perfectly incentivised to go out and make sure that they procure those things at the lowest possible cost for the provision of those services, you know, to themselves. But I think that we would get even more competitive outcomes if that was a fully contestable service open to third parties. So you would still be procuring those services but you would be procuring them through the contestable model.

MR COATES: To help Ryno in his question there, though, would we be buying the product from you and putting it on our RAB, or would we be paying you an annual amount for the service provision? Are you open to either option?

MR SPENCER: I think we'd sort of get into the opex discussion that we were having earlier that you would be buying the benefit of the service. You would be purchasing it off your ring-fenced affiliate, or you'd be purchasing it off a third party, whoever you gave you the best deal.

MR COATES: When you say "purchasing" do you mean purchasing a service or purchasing an asset? That's the key question.

SPEAKER: Service.

MR SPENCER: Purchasing a service.

MR COATES: The thing about a service in the current regulatory environment is we're on a five year price reset and anything that we put into a service which becomes opex, it's just a cost, it disappears.

MR VERSTER: That's right, yes.

MR COATES: If we can put it on our RAB, even if it's part of an R&D exercise to try and get some innovation going.

MR SPENCER: Yeah.

MR COATES: We actually at least get that money back or some of it back.

MR SPENCER: Yeah, obviously it needs to be fair. I guess, you know, I apologise, we have sort of come to this network regulation game a little bit late. I wouldn't say we're the world's experts in network regulation. So I'm sure there will be some issues such as the one you've mentioned and it sounds like those sorts of things would have to be addressed to make it fair.

MR VERSTER: The concern that -- I've touched on it before -- that I still have is about this risk and innovation and who is prepared to take the risk of the new technologies, which could take five to ten years to prove themselves. And if we don't have the ability -- which we currently have within our regulated asset base, be that fair or not -- to actually take some risk and invest in some assets that might be marginal or might only prove themselves in the future, then I can't see really see how any other party is going to do that. If we're precluded from doing that, you're potentially never going to have it because we're just going to keep on investing in conventional solutions that keep on pushing out the sort of period over which actually some of these technologies might have become commercially viable in their own right.

MR SPENCER: I think Vector have made some statements around future planned investment in their network and the economics of batteries relative to network enhancement through traditional poles and wires. I think if those sorts of price signals were made available to the market and those opportunities were made available to the market on a contestable basis, you would be seeing plenty of interest.

MR HEALY: I guess I come from the other angle which is we're unregulated and if I innovate I wear the costs of that because I see a future that I believe in, and that's not going to stop me from, you know, this is not going to stop me from innovating. What is going to stop me from innovating is if I don't know what the price of those services are going to be, or I don't know how that market's going to look in the future. That's really going to stop me innovating.

So I guess I'm concerned that we feel the EDBs are the only people who can possibly innovate in this space, because if I look around the world that's not where innovation's coming from, you know, there's multi-million companies and things happening where if you put a price signal people will innovate, people will chase that price signal.

MR SPENCER: It's probably the case the innovators aren't even in this room at the moment.

MR CAIN: That's not a concern I'm hearing, the concern I'm hearing is more like this is a really nascent market, we don't really know how it's going to work out. It might be that you guys do work really hard in this space and there's a happy ending, or it might be that we sit around for three or four years, you know, look at it and go it's hard to make, you know, everything stack up so nothing happens. In the meantime Powerco or Vector's had to go and augment its network, or maybe have incurred half the costs of both options. I think it's kind of more that kind of concern.

MR VERSTER: That's right.

MR CAIN: That's more sort of market co-ordination or market failure, which if you've got a large party, maybe you've -- instinctively I'm more in your camp, certainly understand that, but I certainly can also understand --

MR SPENCER: Yeah.

MR CAIN: -- the concern about it might not happen. It is the right answer, but it might not happen, we end up worse off.

MR HEALY: In that same respect we haven't done that in the generation and the retail sides of the world. There needs to be price signals to build a new piece of generation kit, the market's given the price signals and things like that. So why are we concerned at the point we're here.

MR SPENCER: I think if you look at these technologies as well, I think they have all the hallmarks of being highly competitive technologies. I think they have none of the hallmarks really of traditional regulated assets. And I guess we're sitting around this table proposing that we take something with all the hallmarks of a highly competitive technology and market and we're talking about regulating it.

MR HEALY: We're talking about regulating, we're talking about certain firms can treat it a certain way.

MR SPENCER: Okay, so we're not regulating it, okay, sorry, apologise, we're not regulating across the board. But we're regulating how it's treated in the hand of certain people and those people, you know, are obviously critical in the energy infrastructure of New Zealand.

MS CASEY: Where it's being used for a market that's currently a monopoly market.

MS TAYLOR: Yeah.

MS CASEY: It's currently market that's already regulated.

MR SPENCER: Yeah, yeah.

MS TAYLOR: So we're talking about the provision of electricity lines services still.

MR SHARP: It's about providing those services at the lowest cost and if that requires investment in new technology, then that's where the distributor will invest.

MR SPENCER: Yeah.

MR SHARP: So it comes around to incentives, that we should be incentivised to invest in the right technologies. So that if there's something broken with the current incentive then that needs to be discussed.

MS TAYLOR: But the provision of electricity lines services, there's lots of functions that are required in achieving that, one of which is asset maintenance and one of which is building new assets. And some of those activities are provided by in a contestable market. Asset maintenance is one. And there are lots of different models that currently operate in the provision of those services. I know that's not an emerging technology, but it's the way a market has evolved and the level of service provision, the number of operators, the type of market actually differs across the country, different geographies. And the solutions therefore are different in different parts of the country. And the way the regulatory regime currently operates is that those different market solutions are able to be accommodated within the regime through different solutions. It hasn't come by precluding certain parties from providing those services. I'm just sort of questioning whether or not --

MR NICK WILSON: No-one's talking about precluding, I think we've got to move on from that point, no-one's saying about precluding, we're saying it needs to be transparent, it needs to be arm's length.

MS TAYLOR: Yeah, that's right.

MR NICK WILSON: If you had batteries in the provision of line services, not a problem, as long as there's a ring-fencing arrangement that goes around it.

MS TAYLOR: But we don't have ring-fencing now.

MR NICK WILSON: No.

MS TAYLOR: We don't have ring-fencing.

MR NICK WILSON: No, I understand that, yeah, yeah, so I understand what we're proposing is that we would. But no-one's saying you can't do it (inaudible).

MR SPENCER: Lots of jurisdictions do have ring-fencing.

MS TAYLOR: No, I appreciate that, but -- yeah.

MR SPENCER: And I guess because we don't have -- I don't know how successful these other markets you refer to are and how efficiently they're operating, but I guess all we know is what we've looked at with these technologies and I guess we have concerns.

MS TAYLOR: Yeah.

MR GREG SMITH: You've got to keep coming back to, and I take your point about contestable market in theory providing the best outcome for consumers. But in some cases that currently necessarily work. If you've got economies of scale that one party can give and share that cost for the benefit of all consumers across a large space, it's worth considering compared to the benefits of competition.

If you think about some of this stuff, if it goes fully -- let's take an example where anybody can put a battery in the home, anybody can put an EV charger in, that's fine, right, but you won't realise the full network benefits for consumers in that scenario because EDBs still have to invest in what they can control. If they can't control it, the way the consumer uses it, there's no benefit to the EDB's network, other than just by coincidence because everybody does happen to behave in the right sort of way.

So there are some scenarios where economies of scale are worth considering, it's whether or not they are in the best interests of consumers versus a fully contestable market.

MR SPENCER: I guess it just feels to me, though, it's not the job of the people in this room to make decisions on behalf of our customers, they should, you know, we should set up the market systems to enable them to have as many decisions as possible. I'd hate us to get to the position where we thought that we could make better decisions for our customers than they can make for themselves.

MR HEALY: Sorry, can I -- just two questions, I guess one is if you paid for control, so you paid for the service and control, would that change how you feel about it. And secondly, if you were able to ring-fence, would that stop you from -- and you still send all the signals about where they're (inaudible) in the future, would that stop you from innovating rather than just have it in the RAB?

MR GREG SMITH: So in the first instance if we paid for access to it, yeah, we could pay for it, right, and we would happy do that if that was an efficient way for us to operate our business and operate our network. The question is, though, is that the most efficient outcome for consumers, because there's another middleman in the process now. So we're going to pay for that service, it goes into our opex as part of managing the network. There's another party involved in the middle for the consumers, making their bits and pieces out of it. What's the best outcome for the consumer? Well they just end up paying more.

MR COATES: It's the cost of your ring-fenced business.

MR GREG SMITH: Yeah.

MR COATES: In basically an emerging world that doesn't really have scale at all at the moment.

MS CASEY: There is no market yet, and if we try to make rules about a market you don't know about yet then we're going to hamper its ability to actually evolve. There might be a market, you know, we could be sitting around this table in ten years and there is a market and it's very obviously a competitive market out there, but there isn't one at the moment, there isn't an option.

MR CARVELL: (Inaudible) about whether you curtail a nascent market. The more you describe, as far as I can see, it is an extension of vertical integration -- and I'm not sure vertical integration is ever held up as being the most efficient outcome, whereas breaking up the market is probably the economically more fashionable way to go -- (inaudible) in terms of some comments made about the incentives on EDBs to innovate, they could be the innovative force in this market. I have some sympathy for the fact that EDBs might well be able to provide some useful input from an innovation point of view. If they're not incentivised because we establish a market, then I think might we think about other incentive regimes.

If you look at someone like Ofgem, for example, as you know, Nick, where they have innovation funds, but the consequence of EDBs -- which are natural monopolies -- taking advantage of innovation funds is that the outcomes of that innovation work is then made public. So if you're prepared to do that I'd be much more comfortable. You're not entrenching the monopoly.

MR VERSTER: The other thing that came up to me as we were speaking, I think part of the problem might just be that we will have conventional solutions for use of 80 years and so on and we're not really challenged on them. Perhaps we should be challenged on them, perhaps that's where part of the conversation that eventually we'll have to go, to make sure that the solutions we put forward are at least able to be visible and seen and tested to be the most efficient ones, even if we still procured the thing in the RAB but we would have had a chance.

MR RUSS: Yeah, that's an interesting question, what is the biggest risk. If you're sitting there and you saw a market and you're going to sell batteries, is your biggest risk that you're competing with an EDB in that market and they have some advantage, or they just go and build capex solutions the old way and you can do nothing about that, and that kills the market for demand side management by building more capacity than you need. So what really is the biggest threat to the market? Is it the potential non-level playing field, is it the fact that they can still build -- over-provide capacity and render the no value chain in demand side management?

MR CARVELL: I think, Nick, you just described a whole bunch of problems that exist with the IMs if that environment could exist. As an example, you might just have suggested to us that the RAB IM should include optimisation on future decisions to make sure they are well disciplined. So how big are the problems with the IMs.

MR SPENCER: Yeah, I don't think either of those options sound ideal.

MR NICHOLLS: I guess I took a slightly different (inaudible) now, but it was a good question, which is -- I'm sitting here thinking about your challenge about interim solutions, because some of what Todd describes isn't terribly attractive in the sense of building a big ring-fence bureaucracy, and there's a bit of problem definition here, but say a big ring-fenced bureaucracy to deal with perceived sort of competitive advantage that the RAB advantage might have for the lines businesses. So third party battery providers or something might perceive that, at least on that front, the lines businesses have an advantage, it goes into the RAB.

But is it worth a full-blown ring-fence bureaucracy to deal with that when these third party innovators, A, might face a whole bunch of other problems as well, life's a bit complex; B, they might have their own advantages, so they might be Google, you know, they might have scale, they might have whatever advantages, finance advantages who knows. So it's a pretty hurly burly, hard to predict market out there. And dealing with one facet of competition which is, if these assets go into the RAB, do the lines businesses have some kind of an advantage here, can we quantify that. And sort of picking on that particular feature of the market and saying we're going go for a ring-fence bureaucracy and deal with that and just shut our eyes to all the other stuff, feels a bit like a rush to me. So your challenge, you know, after the break of, for this next period, can we think what would be sensible to do between now and the next IM reset, feels really important.

MR SPENCER: I guess seven years feels like an awfully long time with the sorts of technologies that we're talking about, and I don't know, you know, what a ring-fencing arrangement, you know, how heavy or light-handed it is. Obviously it needs to be efficient. I guess that would be the challenge, to make it fit for purpose.

MR NICHOLLS: Do you have a sense of the materiality of the competitive advantage that EDBs would have? So say the RAB advantage, how that would affect you in the world view of a new market entrant and all the other challenges they face; is this going to dominate their thinking?

MR SPENCER: Yeah, I think it's significant, I think a sophisticated new market entrant would be extremely concerned around the competitive disadvantage that he potentially faces in this and it may well impact his decision to enter the market. And it's not just whether or not it's in the RAB and how that affects the investment decision, it's the whole -- asymmetry of information is absolutely critical.

Some of the features of the current IMs around how cost allocation works, according to different EDBs and the thresholds that apply the demand management scheme, which provides some unique incentives for EDBs that are not available to other parties, I think there are some quite useful tools in the IMs at the moment to encourage EDBs to compete.

And, you know, in terms of the size of the risk that we're sitting here grappling with, I guess we don't know for sure, but the sense is that the batteries and these other technologies are going to play a very, very material part in the energy supply future of New Zealand. So I think it's pretty important to get it right.

MS BLYTHE: Perhaps one of the ways, whether as a transition measure, would be to think about some sort of -- for that bit of augmentation, which is very much about demand management, is to think about some sort of economic purchasing test. And it's simply a case of, you know, have a tender. If no-one rocks up offer you anything then, you know, you've done your job of being open to ideas from a competitive market, and if no-one arrives, then, you know, you're home and hosed and you can do whatever's there. But it's being able to compare that against different things. That's often done overseas as a way of comparing things.

MR COATES: I think certainly if we went to an alternative approach to the one that's being proposed at the moment, we've got to understand a lot more about what more it actually looks like; because there's been ideas around the table, there's a big difference between a market and a market. You mentioned here earlier about, you know, how well the wholesale electricity market works, but why can't we do that at the distribution level, it's actually right over there at the right-hand end. There's 300 odd nodes on that market, there's more than 10,000 just on the Orion network alone.

So the minute you try and get that kind of market operation working at a distribution level you're up for a -- it's a huge job, it's just incomprehensible. So what is it that we're actually talking about here in terms of -- it's not just about ring-fencing because there's been lots of other comments around the table as well. So what does this alternative actually look like in a bit more detail needs to be --

SPEAKER: Agree.

MR COATES: I certainly couldn't not agree to that approach at the moment because there's too much (inaudible).

MR VERSTER: That might more be the future state, you might well want to go to a completely open playing field with an open access network and all these things, but it will take us considerable time to get there, I know that as well, we're talking about a five to seven year timeframe.

MR RUSS: There was something that Glenn said a few moments ago that would probably be of a concern for me if I was thinking about it from the retail position, is the preference for capex over opex. I think that's an interesting one. I think, you know, we've worked with Transpower a bit to develop incentives around their regime, so at least theoretically or ideally they should be indifferent between the choice of capex and opex.

It would be good to understand potentially the views of the distribution businesses about the preference for capex over opex and what's driving that or what could be done about that. Because that seems, I guess to pick up Gillian's point about, you know, demonstrating, you know, a tender approach to the lowest cost; one of the costs could be internal capex for the business, it needs to be sort of assessed on a one-for-one basis to what opex would look like out the door. So I don't know if there's anyone --

MR COATES: I have one confession to make, just my -- I don't fully understand IRIS yet. So I'm a bit old school in that comment I made, so I'm not sure how strong the incentive is (inaudible).

MR RUSS: I didn't mean to pick -- what I found was when we had the 54Q working group as part of the last reset there just seemed to be some inherent engineering bias to preferring capex, like there's kind of -- it's well understood, you get more certainty, people perceive it as more reliable, like almost a natural reluctance to procure a service, rather than take the risk -- I mean have an asset that's, in your view, guaranteed to provide the service rather than procure the service on an open market. And then there's also the financial side of it about equalising opex and capex for those that are interested in that topic as well.

MR PARRY: I think, Nick, it's worth thinking about like the contracting problem is quite hard, especially for an early market, a contracting problem for the supplier to get an equivalent opex-like service that's going to give them a level of guarantee that the thing will still be there at the time that they need it. From the supplier's point of view they can't afford to have the battery service disappear, so they're going to need to contract a fairly high level of commitment, which is probably quite a hard contract to strike. Not to say it wouldn't be possible, but if you're ring-fenced from day one you're making everybody vulnerable or reliant on being able to find a set of contractual arrangements that bridge the commitment problem. It's not financial treatments, it's --

MR RUSS: I think that's an excellent point, if you look at what Transpower have done for demand side management, it's, what, five or six years including funding for the regulated service to set up a platform to start getting good cost information and systems to be able to potentially tap into the demand side management to defer capex.

MR PARRY: Not just that but the contract structure as well, the contract look like and how (inaudible) --

MR RUSS: How does it work.

MR PARRY: -- penalties, how is it structured. It takes a while.

MR NICK WILSON: Even with your own ring-fenced businesses, though, you could contract pretty much with yourself, right, so you could -- they'd all just be at arm's length.

MR PARRY: Yeah, you'd still have a commitment problem (inaudible).

MR NICK WILSON: That's my question, is it the same commitment problem to the same extent?

MR PARRY: I would assume so, because you can't -- (inaudible) by ring-fenced entity.

MR RUSS: I guess they're off-setting liabilities if you own the kind of ultimate controller.

MR PARRY: Yeah, but if that one becomes insolvent.

MR RUSS: Yeah, you're still left holding the problem.

MR CAIN: We have thought about these things, we have thought about a long-term, what would you like, what would be good to see in the medium to long-term versus where are we at right now. I think there is a bit of a trying to sort of jump straight to the, you know, medium to long-term solution, which is, you know, possibly the right model, you know, where you might have lots of parties playing in this space, you might have regional or national or global, you know, kind of people operating here, but it is how quickly do you get there. And thinking about ring-fencing, it's a nice little word, right, but having spent a few years working at Telecom where they (inaudible) it can very quickly become a very costly and messy exercise and imposes very significant transaction costs.

MR SPENCER: Well, yeah, but you look what's happened to customer costs and choices as a result, so it seems --

MR CAIN: I'm not sure it had anything to do with ring-fencing.

MR SPENCER: Well, yeah.

MR CAIN: But, you know, that got a lot of innovation and competition going on in that sector. But don't get me wrong, completely agree, I think competition in markets is good, vertical integration can, as Allan says, can result in worse outcomes; not universally true, in fact the reverse could be true often. And see the examples of that in this sector.

MR HEALY: I guess overall what we're saying is we see opportunities for these to be competitive markets. We believe these could be competitive markets and markets for the future of the industry. I guess, you know, we laid out the scenarios because we want to explore all the options, we didn't want to narrow ourselves. And we admit that some of these are going to be hard options to go down the road of, you know, they're going to be -- you know, the easiest thing could be just to say let's leave the regulation as it is and we'll try and do some things on the side. That's ultimately, you know, we're all here for the better of the industry, we are believers that competition will create the best outcomes for this industry. There are some parts of this industry that may need support. There will need to be regulators, why don't we make competition as strong as possible outside of those. That's what will encourage innovation, that's what will encourage new business models, that's what will encourage the kind of future better for the consumers.

MR VILLALOBOS: Part of the discussion I think needs to be -- a little bit on the fringes, I'm probably -- Susannah's going to look at me what are you doing -- we do have Part 2 of the Commerce Act which is all about abuse of market power and competition law essentially. So to what extent does that sort of address some of the concerns that you may have from some people leveraging market power from one market to another. I'm not an expert in competition law, even less so competition law here. But I guess, it exists for that reason, right, to provide that level field for competition to happen.

MR TONER: I think it's important too, when you think about innovation too, that we're not sort of down in the mud here. Because when you think of the likes of Tesla and the Googles coming to play in this space, you know, they're not sitting around worried about EDBs and stuff, they're going to grab a whole lot of data from somewhere else and deliver some new innovation.

So to think that just the EDBs are sitting on the pot of gold that can do this I think is quite limiting, because obviously that isn't holding up Tesla rolling out however many million consumer batteries and I think as far as I'm aware they don’t own a single EDBs. So it's sort of just important to think about the change that is coming down the path and to sort of -- perhaps we're sort of looking at yesterday's solve when we think that the EDBs are sitting on something special when Google and Tesla's going to be playing in the space. And to me innovation's way bigger than that and the exciting innovation's going to come from all over the place, you know, not just sitting on poles and wires.

MR RUSS: I'm conscious a few people have got to head off at 3 o'clock. So I was just wondering if there's anyone else particularly that wanted to put some views on the table reflecting their organisational views. I know we gave the opportunity to a few people. Is there anything specific before we sort of move into the summarising?

MR HANCOCK: If you can indulge me for a few minutes. You started off by asking me whether the work we did on the forum last year had anything to inform you, and I very confidently said no, not at all, what we looked at was very clear and so our conclusions were very clear. But listening to this discussion it does make me think that I think the characteristics, the problem we're looking at here, it's about regulated revenues for regulated businesses, that's the problem that we're talking about. We're not talking about the development of new markets per se that the Commission (inaudible) because they've got this other job to do which is worrying about regulating line function services.

And when I said that the two case studies we looked at were very clean, because in the case of ripple control all the costs and benefits are relatively clearly washed up in the regulated service, whereas in the smart meter roll-out all the costs and benefits sort of got washed up in the competitive market.

I think what's particularly difficult here is that the benefits from these new technologies are A really unclear, and B they're probably about 50 per cent attributable to network-type services and 50 per cent attributable to energy market services. So it's really unclear where the natural incentives lie to get these things moving. I think the brutal truth is people actually don't know how these technologies will be optimally used into the future.

There was one case study that we did look at which starts tickling this issue, which was around network companies getting access to smart meter data for quality of supply to improve their asset management planning. Some of you who are close to the industry might remember the massive tantrum that several EDBs threw because they wanted access to smart meter data when smart meters were first being rolled out, and smart meter companies were very busy rolling out 1.5 million smart meters and actually didn't quite get around to answering the phone. The EDBs were so infuriated by this they actually started investing in their own infrastructure because they wanted the data in order to change the way in which they were doing their asset management planning.

And what's happened in the subsequent five years is that in one example there's an EDB-led organisation which provides smart meter services on the same grounds as the merchant vendors do, and that's providing services to retailers and also to network companies blah blah blah blah. But in most cases the network companies are buying quality of supply data from smart meter vendors because the meters collect all this stuff and they can now get someone to answer the phone.

And it's quite interesting because to my mind what it's really pointing to is that these are transitional issues where it's been quite important to allow the engineers and the practitioners to play with the technologies and understand that what their requirements are, because I think candidly they didn't really know seven years ago. But even more importantly the regime must encourage the providers of the network services to seek out the least cost solutions, rather than predicating them on always building the infrastructure themselves or always buying it from a third party.

And I think in either case there's a real risk that you either lock out a whole bunch of very efficient potential options, or you freeze in aspic something that's incredibly inefficient -- go and talk to the Victorians about this if you want to know more that -- and surely dynamic efficiency is about being able to play the two off against one another, particularly when you're talking about rapidly changing technologies which are potentially quite disruptive for a lot of legacy processes.

I think in the context of your problem, Commerce Commission, that's the much more important issue than these short-term issues around, you know, sort of market access today, tomorrow or the next week, given that we're, you know, merely talking about the optimal management of these assets which do have a life of decades not one, two or three years. Just a thought. But we did write a little bit of detail up in our smart meter investigation there which is sort of vaguely relevant.

And the other point which I don't think we did write up actually was Gillian raised the Transpower demand response infrastructures having some quite attractive features there. It effectively provides an auction where anyone who's got a bit of demand flexibility can offer it in and, you know, it can be monetised and that's all good.

The one thing I would point out about that, for those who aren't familiar with it -- and Stephen's probably got heaps he wants to say about it -- is that it only deals with half of the opportunities for storage in these new technologies. So Transpower has had to write a side letter to the Electricity Authority with a legally binding undertaking not to use that infrastructure to interfere in the energy market, because the potential ability to cross-subsidise energy market participation with regulated revenues is so big there and it's a, you know, wholesale access, but Stephen might talk about crowding out as well possibly, or might not.

MR DREW: I might. (Inaudible).

MR HANCOCK: I don't think we wrote about that actually, we just talked about it when we were doing the analysis.

MR DREW: Yeah, I won't quite talk about that John, but what I will do is, you know, I've listened and it's all very interesting, we've had great discussion on the Smart Grid Forum about various things. But Glenn made, I think, the most important point listening to you all, is that we have to keep our options open going forward. And I would love to see the EDB industry do more innovation through RD, not research and development but also demonstration.

I think the value in the UK of UK low carbon network fund has been the demonstration projects that they've done involving consumers. And it's only through these demonstration projects that we will actually understand the economics of scale of aggregation of batteries in the future, which is so important to this country for security of supply, which we haven't really talked about yet. Because as we lose big industrial loads in the future we are going to lose our big industries, we are not going to have the interruptability on the grid for security of supply.

And this encouragement is needed in the next five years and it can only be done through demonstration through your industry somehow. That's the innovation we desperately need. And it can only be done practically, it cannot be done with papers or thinking. And then you'll understand some of the, you know, how best we aggregate some of this for the future.

It's not just EV charging, it's everything consumers use, from use of batteries in the car, spa pools, temperature control of heat pumps, all this is the future for distributor load control that this country has to sort of embrace.

MR NICK WILSON: The batteries could, I mean it was similar to the debate, I think, that was had in the electricity sector around ripple control. When you think about the way our energy market works it's quite unique in terms of everything is in the price, the wholesale price sends the main signal for actually investing in generation.

One of the concerns I have is that once we start investing in large scale batteries they have the effect of suppressing wholesale prices just via the arbitrage opportunity you'll have. So longer term is that in the long-run interests of consumers when batteries won't be able to supply electricity, they can only shift an electron from one period to another and typically over a very short time period. Generally we need to shift water in particular from when it's wet to when it's dry over multi-seasons. You have a lot of batteries that suddenly enter into the system and squash that incentive to actually invest in future generation, do you in fact do a disservice to the long-term interests of consumers because you bring into doubt the security of supply aspect.

So I just wonder whether or not the future of large scale batteries needs that overlay put over it and what the impacts might be on incentives in the wholesale market.

MR PARRY: I think the battery is collapsing the value of the interday peak and that's why the price goes away. If there's still value in inter-seasonal peak then there'll still be a seasonal price differential that the battery can't meet the demand for it. It's just the price signal working.

MR RUSS: I'm left now with the dilemma of heroically trying so summarise all this stuff. **[Laughter]** So I thought I'd helpfully look at the questions that Diego put in the presentation, and I just went through ten of them to see how many of them we even got close to talking to today.

But what I do propose is very quickly to run through these questions and why we were asking them and try and get some view on where we think we ended up today, including if we did not cover them, and then develop the alternative list which is all the questions that come out of today that it sounds like we need to be looking at.

First question was, do you agree with the contents of the paper. I think what that's really asking is we've tried to provide a factual summary of how the current rules work. Didn't hear any concerns with us not interpreting the current rules correctly, apart from some concerns about how far you can push the definition of lines service in terms of that statutory definition. So we take that away, I think Allan, who's just headed off, made some very valid points about we've got to be a bit careful in terms of interpreting that, it paints you into an outcome where alternative interpretation would result in something different. So I think we would take that away.

Question two, I didn't really hear any concern with the idea of the distributors themselves applying rules and getting them audited, I think it's more about what those rules should be. So I didn't hear any concerns at the moment at the kind of self-policing with audit in reference to us for checking would cause a problem regardless of what the actual under rules are themselves. So I know it didn't really explicitly come up, but it didn't seem to be a big concern about the EDBs being left to interpret these things with the appropriate guidance, wherever we end up.

I guess a lot of these stem from what we thought the original potential concerns could be around cost allocation. That really leads on to the next one. You know, this is probably responding to some comments we've had from the distribution businesses, that there was potentially not enough flexibility provided in the three different cost allocations to deal with the future.

So again, I didn't really have any discussion today, apart from the relatively well understood by the distribution business, that the methodologies themselves are problematic; it's the circumstances that you end up applying them seem to be the bigger question. So out of the two different accounting methodologies, plus the OVABAA that we invented, it didn't seem to be any problem that they could be used appropriately in the right circumstances, so it doesn't seem like that's actually the problem.

MR SPENCER: I think -- we might be jumping to the next question -- I think we had some concerns around the size of the materiality threshold that applies on ACAM.

MR RUSS: Yeah, that's very much the next question about the materiality. We didn't explicitly touch on it, Diego did have a slide in his pack. But that clearly makes sense, like the bigger issue that's bubbling up today that was discussed a lot about the impact on other markets, obviously the materiality. There's the materiality for the distribution business and then there's the materiality for the market that others are concerned about. That sounds like there's something to be explored there.

MR VILLALOBOS: We would welcome submissions on that.

MR RUSS: I think Calum did a pretty good job of explaining -- given 52T(3), if that's the right one -- why we have to have that methodology that straddles the both. Again, I'm not sure how massively used, even if at all, it's been.

MS TAYLOR: It's not I don't think yet, no.

MR RUSS: People understand why it's there to enable to give effect to that Act. So again it wasn't a big issue. I did hear some chat, question 6, particularly around the accounting experts in the room, about the idea of leases being counted as capital contributions, other way of dealing with them. It just sounded like that was a relatively straightforward accounting, there is an easier way to do it. It doesn't change the outcome, NPV, it's the same thing, it's just how you figure out the timing of the revenue and how you take it into account. So it seems like very much a practical accounting issue, or not even an issue. Something that's well understood by the accountants and not something that really caused a problem today.

I think question 7 really goes to the heart about where you get to from the interpretation of the lines services. So I think that's kind of, you know, a lot of these questions about whether there should be a ring-fence or what competitive advantage someone has. So I guess that really does go to the questions about the cost and revenues being treated as regulated or unregulated. So that question is very much effectively left hanging depending on where you get to about what you want to achieve with these markets that John Hancock, very elegantly as usual, expressed the bigger question going on there.

I think I heard today there's enough chance that it's likely that EDBs, if they do get into this area, are likely to bundle charges for both regulated and unregulated services. So this will be one just to see if -- is this something that is likely enough to need us to turn our -- so if nothing else was to change, apart from potentially focusing on rules around revenue allocation, the reason to do that would be if these things are likely to be bundled, do people see that as a big enough short-term concern that it's worth exploring, or it's too hard to answer that question until we address some of the bigger --

MR GREG SMITH: I think there's wider pricing issues that have to be solved first, you know, before everyone can fully determine bundling or unbundling services. We've got to get to the bottom of what pricing signals we can actually send and what are worthwhile sending. And we also need to understand longer term form of control and other things that give a bearing on what, you know, an EDB's going to be incentivised to do.

MR RUSS: So thinking off my head to enable that to happen then, in the short-term almost like under the current regime we'd have to not allow an EDB to bundle prices in order for us to make sure we can assess compliance.

MR CAIN: I wasn't 100 per cent sure what you meant by bundling, how you kind of envisage it happening and where (inaudible) because like these services basically would reduce the cost of supply.

MR RUSS: It's how do you assess compliance, because we can only regulate the portion of that revenue that's related to the regulated service. So imagine you send someone a single bill and some of it is for providing arbitrage services and some of it's providing lines services. How would we deconstruct that in order to cap the revenue that's associated with the regulated service and allow the unregulated revenue to be left untouched appropriately so. Is that right Calum, is that the best way of --

MR GUNN: Yeah, another example might be if Powerco decided to own its EV charging stations down the street and it charged a per unit price for filling up your car effectively and didn't isolate the conveyance portion in the charging portion, so that might be an example of bundle price.

MR GRANT SMITH: I think you've got to unbundle revenues and charges until you understand the whole market, so if you've got a period while you're doing the first interim period here of implementing something, keep it all unbundled so people can actually see what proportion of, say, revenues are coming from unregulated versus regulated.

MR RUSS: Rather than an allocation.

MR GRANT SMITH: Yeah.

MR RUSS: Do any of the distributors in the room see a problem about in the short-term not bundling the prices or the revenues so that it can still be clear what price relates to a regulated service and what relates to an unregulated service? Would that be problematic or is that a pragmatic --

MR COATES: Don't you want the freedom to bundle it in the real world but have a mechanism for deconstructing it like we do with costs in the accounting world?

MR RUSS: So that's an allocation, yeah.

MR COATES: Yeah, why can't you have an allocation.

MS TAYLOR: It's no different to the unbundling we have now in pass-through in transmission. Because we already have to unbundle line charges for compliance perspective.

MR SHARP: At the end of the day isn't it down to what the customer wants. So like if your customer is a central organisation where you're talking customers (inaudible) then you should be providing what customers want rather than trying to do things that -- the customer's sitting there going (inaudible).

MR GREG SMITH: But don't forget, it's the retailers billing the customers at present as well. So, you know, we'll be talking with -- unless we start direct billing consumers, you know, we're dealing with retailers about, you know, lines charges. If we had a direct relationship with a consumer for another service, at the moment we're not really in a position necessarily to easily bundle it, we would have to essentially bill that consumer directly for whatever service we are providing them and continue to bill retailers for our lines charges; automatically is a separation there.

MR RUSS: Trying to bring this back to in terms of the work programme for the guys that will be working on this.

MR GREG SMITH: So I don't think you need to be --

MR RUSS: I guess the question is, is there a burning platform for focusing on how revenue gets allocated?

MR GREG SMITH: No, I don't think so.

SPEAKER: Not yet.

MR HEALY: It all comes down to cost allocation.

MR SPENCER: I think we're interested in how that gets allocated.

MR RUSS: Yeah.

MS CASEY: I think there are enough burning platforms.

MR CAIN: I think there's the other side, which is how do others see the pricing within that. If you've got a bundled price (inaudible) if that's (inaudible) happy to have discussion.

MR RUSS: Yeah, so distribution businesses were saying no. So if you were to bundle how would you unbundle at the moment, you're saying you'd find a way.

MS TAYLOR: Currently there's a requirement at the compliance level to break apart your charges into its different components; distribution, transmission, pass-through.

MR RUSS: Yeah, but all those components are well-defined costs where the revenue charging is the cost, right, transmission charge is part --

MS TAYLOR: But you're not un -- yeah, basically you're breaking apart a unit price.

MR RUSS: Yeah.

MS TAYLOR: Because it's at the unit price level. It's not at the revenue level, it's at the unit price level.

MR COATES: Whether you bundle it, unbundle it upfront or later, you've still got a mechanism problem. You still have to do it at some point. If we decide to sell this as non-regulated and this as regulated and we put a price on it, you're still going to want to understand where that's come from. So I'm not sure it makes any difference as to whether it's bundled or unbundled in the retail customer space versus whether it's done in the accounting treatment. You've still got the same issue.

MR CAIN: Is your concern, Nick, one about transparency and understanding what's going on or about competition or about both?

DR GUNN: No, it's simply because at the moment we have assumed that those prices for regulated and unregulated services are distinct. So if they're not, how do we deal with it. The suggestion has been one way of dealing with it is through the compliance side of things. So that might be a possible solution. So at the moment we haven't seen any bundled prices for regulated and unregulated services as far as we're aware.

MR HEALY: So distributors would have quite a strong incentive to unbundle themselves wouldn't they in that case? If they weren't able to recover the commercial --

MS TAYLOR: From a disclosure perspective, the non-regulated revenue component of the bundled price would need to be excluded from your regulatory financial statements. At the

revenue level there would already be -- so the question you're pushing at I think is, then what about at the individual tariff level. Is that where you're pushing?
MR GUNN: Well, the unregulated revenue is out of our control, so to the extent that a price captures both --
MS TAYLOR: Yes.
MR GUNN: -- somewhere it needs to get separated so it's --
MS TAYLOR: Yes, and I think it would already in the regulatory financial statements from an ID perspective.
MR RUSS: In total.
MS TAYLOR: In total.
MR RUSS: Then you'd also have to do it at the price quantity level to demonstrate compliance.
MS TAYLOR: Exactly, and so you would be required to drill it down --
MR RUSS: Yeah.
MS TAYLOR: - for non-exempts at the price level in order to get your DPP compliance.
MR HEALY: Is that provided in real-time or is that 12 months post?
MS TAYLOR: You have to post your line charges in advance at the tariff level, so that would be in advance.
MR HEALY: In advance if you had a bundle you'd -- you had advance you'd be able to say the break-down, you know --
MS TAYLOR: Yeah.
MR HEALY: -- someone else, a third party provider could see.
MS TAYLOR: At pre 1 April every year for the pricing year the tariffs are posted.
MR HEALY: Yeah.
MR GUNN: Although even at the revenue level, to split the regulated and unregulated, let's say all your income came through bundled prices, on the cost side there are some rules as to how you deal with that principles but there are none on the revenue side, so --
MS TAYLOR: But the revenue side -- yeah, that's right, there would be.
MR GUNN: So the question is, if that were the case what kind of guidance, if any, would need to be provided to do that exercise.
MR HEALY: It comes back to that ID doesn't it?
MS TAYLOR: At the moment it's the definition of lines services, right.
MR RUSS: Sounds like the two things would be the distribution businesses would need guidance potentially to make sure they're complying with disclosure and compliance, and particularly the retail would like to see visibility of this, they can see what makes up the tariff

component in terms of regulated/unregulated service.

MR HEALY: I mean agree from the customer point of view, and that's our surveys and things of customers, they don't want to see all this unbundling and things, it's complexity they can't deal with, so --

MR RUSS: Next question is again, number 9 was a much more techy one about how to treat cash flows in terms of capital contributions versus other regulated revenue. Sounds like there's well-understood accountancy rules around how to do that.

So probably moves on to question 10 which did seem touched on quite a few things today about do you think additional R&D or innovation incentives are needed and if so what. From our point this question's been asked around incentives for the distribution business to undertake R&D or innovation that will benefit the consumers of lines services.

MR FLETCHER: I think if we're investing now in technologies which are uncertain to try and understand what the impact on future network investment might be, we should be encouraged to do that I think. Either through a separate fund or through recovery within this transition period.

MR RUSS: So you'd say you're not encouraged at the moment to do that?

MR FLETCHER: I would say there's uncertainty as to whether sort of things like we were talking around testing demand side management trials and things like that around EV charging, whether or not ultimately it would be treated as a regulated service and we'll get long-term recovery against that asset.

MR RUSS: That's a thing that's come up quite a lot in my discussions with some of the companies, is just regardless of whether the distribution business is likely to be active in the market or not, trialling the technology themselves so they can have first-hand experience of how it's likely to impact on their network; is that a fair characterisation of -- so that sort of -- you know, does that create the same concerns from the kind of retail/consumer side about, you know, it's just literally doing a bit of R&D to understand the likely potential impact regardless of who actually eventually enters and participates in those markets, some idea of what the technology could potentially do from the network from a technical point of view?

MR VERSTER: Keeping options open.

MR HEALY: In terms of that, is that like as mentioned before, the system in the UK where that information would be publically available?

MR RUSS: So at the moment there is no explicit incentives around this, so there's no additional funding, the companies would either do it out of shareholder or within their current pool of money.

MR HEALY: Yeah.

MR RUSS: So currently there's no more disclosure on this than is what is already in information disclosure and what they put in their own asset management plans. Some companies choose to say more than others about what they're doing around innovation. So at the moment it's kind of no special funding, no additional reporting requirements I think is probably the best way --

MS TAYLOR: No incentives --

SPEAKER: No.

MS TAYLOR: -- really, other than cost incentives or quality incentives.

MR RUSS: So the thing that's most important to drive it --

MS TAYLOR: Or demand, energy efficiency incentives, if we ever get any.

MR CAIN: But the consumers ultimately pay for this if it's in the RAB.

MR SPENCER: I think consumers would have an interest in seeing --

MR CAIN: So the consumer will pay for this trial if it's in the RAB.

MS TAYLOR: No, well only if it's in --

MR CAIN: Only if it's in the allowance.

MS TAYLOR: If it's in the allowance, in the price path allowance, yeah.

MR CAIN: But in that case it's always -- the firm's always better off not doing the investment.

MS TAYLOR: That's right.

MR RUSS: The best way to think about it there's a sharing. So the EDB doesn't get to innovate for free, they would have more money in their back pocket if they didn't innovate, and there's a sharing between themselves and the consumers, and it goes to this IRIS point which we won't go into today.

MR CAIN: It gets back to in the short-term, you know, long-term the business is better off, you're going to get a more efficient business in the long-term, but the businesses don't get to keep the benefits of that long-term like would happen in a normal market.

MS TAYLOR: Consumers get to benefit.

MR CAIN: Consumers capture most of those benefits. So in a competitive market you take the risk out in front in your R&D, but if it pays off the firm banks it long-term. The dynamic's quite different for regulated firms.

MR COATES: You have to get the benefit within a five year period, after that we get it all back.

MR HEALY: So if you invested in batteries say one year before the price path is reset, would that not go into the RAB for the following year?

MR CAIN: We're talking about R&D as opposed to a new lines business.

MR HEALY: Okay, so R&D itself.

MS TAYLOR: R&D, yeah.

MR HEALY: Okay. Then what you're saying is there's no explicit R&D allowances, any assets generated out of those R&D they would go on to the RAB?

MR COATES: Or another way of looking at it is if we do some innovative work now to save money in the next five year period, yes, we add that on to our RAB but we don't get the benefits of what it saved. So the money that gets saved all goes back to the consumers, it doesn't go back to the shareholder. We only get to add to our RAB the amount we spend on trying to make that saving. So that's the trade-off here. We can innovate or we cannot innovate. That's the rules and the environment we're in. It's not like a normal market.

MR CAIN: It's not like there’s no incentives but it's not as strong as competing markets.

MR RUSS: So basically they don't -- they don't get to hold on to the benefits as long, but there's more sharing of the upfront costs.

MR HEALY: I'd be really interested to see more on the same, I guess that's what I've seen in information disclosure etc, it's hard for us to see that.

MR RUSS: Yeah.

MS TAYLOR: But also the incentives are new.

MR HEALY: Yeah, yeah, yeah.

MS TAYLOR: They actually don't play out in terms of a financial sense until the next regulatory period, that's why you haven't really seen them yet.

MR SPENCER: I guess if there were specific incentives, a regime of incentives rolled out to encourage innovation and R&D, I think to get the full value of those incentives it would be good to make the results of that testing freely available to encourage innovation.

MR COATES: Another way of describing this is that we have to actively choose to make our business smaller, and around this table today we've talked about people stopping us even growing a little bit. **[Multi-speakers]**

MR GREG SMITH: There's something to think about in a central sense I think there. The point made before about the UK, we all understand that, the central fund. The thing that that does do is it stops, you know, 29 businesses doing the same sort of trial, right. So I think there's some value there in looking at that and maybe having something that we can, you know, apply for as a way of doing some sort of R&D, it is all shared publically.

MR VILLALOBOS: Something I need to understand better is, and before the point was made that some of these new technologies would more easily or more likely be deployed under the current more flexible structure rather than on a more ring-fenced sort of world; at the same time we seem to be saying now that there's not enough incentives to innovate and do R&D for the monopoly sort of regulation aspects.

MR GREG SMITH: As it stands at the moment, if there's uncertainty about how we're going to recover costs, right, then, like any business, you're going to have to prioritise your capital, your operating expenditure against what you may need to do, which is fundamentally to make sure we keep the lights on within our quality requirements, that's what we're funded for.

So to go and spend extra capital with no idea about what the return could be is a tough proposition to put past any board. So it's kind of like how you get that balance right between, you know, encouraging some R&D, and sure, there's a little bit of risk that goes with R&D, but as the point's been made, in a competitive market if that risk comes off you keep all the rewards. In our case it's a bit different.

So, you know, whether it's the fund or some other answer, I think there's something there to explore a bit further that might just encourage a bit of R&D for the benefit of all.

MR SHARP: Some of this we also have to do, though, it's incumbent on us as sort of a prudent operator --

MR GREG SMITH: True.

MR SHARP: -- is to find out what this technology, what impact it will have on other customers. So, you know, the impact of what solar will have on the network and do we need to invest in things that, you know, condense harmonics and that sort of thing. So as a good operator of a network you do need to spend money to find out how these technologies will impact you.

MR RUSS: You can take that even further, I've certainly heard this comment made by many in the room. You know, it's almost like, you know, if you aren't getting more innovative and more efficient over time, should you be rewarded with a lower return until you're able to improve efficiencies. I think many in the room would argue in a competitive market you don't get the choice like Glenn's articulated. EDBs kind of have this choice because of the risk about it, they don't necessarily need to innovate, which results in poor outcomes for consumers in the long-term. But there's not a strong incentive on the companies to do that so to speak. Not the same pressures you get in the competitive --

MR COATES: One thing we're mindful of is the long-term big Commerce Commission stick, you know, if you do it really badly it will come out.

MR VERSTER: I would put it even more widely than that, the Commerce Commission might be the representative of this step but I think it is about long-term sustainability. So it is a long-term driver to ensure that we actually do keep on top of new technology, that's just survival.

MR RUSS: You only have to talk to Brent Layton or Carl and they'll tell you guys about the need to minimise your costs in order to avoid potential bypass, right, so you can argue there is incentives there to innovate, to minimise the cost of delivered.

MR COATES: Reintroduction of optimisation or, you know --

MR CAIN: I think there are, you know, there's sort of innovation and there's innovation, right, there's, you know, we're all trying to constantly innovate and do our job better, you know, to build our equipment better, to operate it better and cheaper and all those sorts of things. Then there's, you know, gazing into the sky and saying what's happening in terms of emerging technology. Some of those they're kind of pan-sector issues, they're things that might not necessarily be a transmission or a distribution problem, or, you know, and you say well who should be owning that and doing the work and, you know, studying the impacts of these things on businesses. Maybe they should be done by individual firms or maybe they should be --

MR RUSS: I think that's an excellent point, because when I think back to the original innovation scheme that was developed in the UK back in 2003 it was about real-time load management, fault limiting devices, innovations about operating a network. Where sort of now with the advent of the term smart grids, innovation we're really jumping into innovative business models and very different things from just innovation about asset management, which is where it actually started out quite some time ago. That was the original concerns in the UK that the companies weren't innovating on the basics, so to speak, they weren't getting better at asset management. Now we're sort of over-laying a whole different concept of R&D and innovation which is testing completely new untested technology that are alternatives to the traditional.

So Diego, have we managed to get some answers to your ten questions before we go to the bigger list of ones we may have generated today?

MR VILLALOBOS: Yeah, I have to think more about the R&D and innovation, yeah.

MR HEALY: Is it worth, Nick, I mean it would be useful from our point of view if you could document that, how it works today and how we think about the incentives that are there today so we can comment on that. It would be useful from our point of view. If you want us to comment on that it would be useful to see what you see is the perception of how innovation is incentivised or not today.

MR RUSS: Yeah.

MR CAIN: There's lots of benefits of having the market structure we've got today, but one of the problems we have is you've got fragmentation, and it does make it quite hard to respond on common pan-sector issues. You know, we're talking today about emerging technologies in the context of the IM review, but we're talking about, you know, distribution pricing over here, we've got low fixed user charges, another thing that's in the way of reform, settling transmission pricing, understanding what's happening with DG pricing principles, all those sorts of issues are all in the mix, and it's very hard to get a cohesive view of how they fit together. That's not an R&D problem, it's one of the challenges we've got to grapple with.

MR RUSS: It's probably a good way to lead into probably the bigger question here, right. So I guess Commission staff are sitting here thinking, so what does this mean when you pick up the cost allocation methodology and think, get your red pen out and think who's saying what changes could potentially happen here. So a lot of the discussions about the almost pan-sector things around incentives is much more about the package and how it all fits together and how price paths are set. It isn't as simple as just how costs are allocated.

But where we originally started out, we thought we were hearing from the distribution businesses that there was some potential concerns about how cost allocation worked, whether it was potentially not flexible enough to deal with new technology, does it even deal with new technology, these yet unthought about unknown business models.

At least today we're starting to hear that at least from the distribution businesses there's probably -- if we were to say in terms of prioritisation there's no burning platform for material changes to the input methodologies in relation to cost allocation, it doesn't sound like there'd be a lot of pushback from the distribution businesses. At a very highest level is that a fair --

MR COATES: Yeah, could I ask a question of Lynne there. One of the things that's going through my mind is the generic justification for the treatment of those accounting principles versus the case by case. So potentially with battery storage you're talking about 10, 20,000 connections on your network, each have their own little individual specific business case actually. It's not practical to apply these accounting treatments on a household by household basis. So is it flexible enough to deal with that, is it okay to put up a generic cost allocation process to deal with this, or is that going to be a problem for us?

MS TAYLOR: So you have your own choice about how granular your cost allocation methodology is, and that comes partly down to how granular your information is within your own business about your assets and your unknown costs, and the business cases that sat across that. So it's not prescriptive, yeah, so every business approaches it in a slightly different way based on their structure, the amount of sharing of costs and assets that there is versus dedicated, directly attributable, non-directly attributable. And there's now in the materiality, which is where you get your ACAM outcome. So the short answer is it sort of depends. And also it can change, evolve over time depending on if the usage of your assets evolves over time.

MR RUSS: Our working assumption is the Lynnes of this world, i.e. your auditors, will keep you honest on that one, right. Like it's not easy, but you'll find a methodology that the auditors of this world will keep you guys in check about the granularity and what's possible. Each year our compliance teams will identify if there's some concerns there and we have sort of audit workshops.

MS TAYLOR: But also --

MR COATES: I'm thinking transaction costs and overhead. One of these new technologies is all about opex and time.

MS TAYLOR: But when you look at your cost base, 90 per cent of it's really clear where it sits, either here or there. So you only actually have to focus on the 10 per cent. So you can spend some time on that, getting that right.

MR GREG SMITH: From our point of view, Nick, Wellington Electricity's point of view, we don't see a burning platform with the cost allocation IMs in relation to what we're talking about here. I think it's workable, it's manageable, there's some sense to them already, and it is just going through the mechanics of it.

MR RUSS: So Powerco, Vector?

MR FLETCHER: We'd say the same.

MR VERSTER: Same, yeah.

MR FLETCHER: I guess, you know, whether there's a need for more transparency as it's going to be applied more to these new emerging technologies in the future then, yeah, we'd support that.

MS CASEY: We think the conversation's very much around incentives. We don't have a particular issue with the cost allocation methodologies.

MR RUSS: I think Nathan was the only other EDB so I'm not missing anybody out. So now characterising the concerns that we've heard, I don't want to create an us and them, but I will say from the other side. I'll put Ralph in this and he can sing out if he -- so fundamentally it seems a concern about your guys perspective about the strong-held belief that these other markets will best serve consumers by keeping them as competitive as possible.

So fundamental, the regulation in its entirety and also cost allocation rules have given concerns about what it does in terms of a level playing field and what the impact will have on these markets, both in the terms of pure cost allocation in terms of getting an advantage, and then, I guess, the kind of intrinsic advantage that you guys see that a distributor has because of its relationship or its information asymmetry.

So there was lots discussions around the benefit that increased transparency could have around that. So clarity of where, like Glenn already does it sounds, a very good job in his AMP of setting out the value they would place on demand side management at particular locations, that sort of information would be helpful.

And then it really morphed into a conversation about some sort of assurance that could be put around it being a level playing, or a transparent playing field and as level as possible, either one extreme banned from taking part in these markets, to arm's-length ring-fencing, or anywhere on that continuum that means some obligation potentially on the distribution business to demonstrate that they've achieved a competitive price if they are using themselves or an associate. So that seemed to be the real nub of the issue from the retailer point of view.

Then I think collectively we all have concerns about ultimately where we're trying to get to in a market that's got vertical separation, bigger picture policy questions about how will these incentives fit together, some of them which are interesting but not specifically relevant to the IM review, and particularly what we do in terms of transition versus longer term.

I think sort of the area seemed to, you know, I guess most of the distribution business concerns are practical about their usability; the retailers predominantly about the level playing field and what markets and what that means; and then all of us, the bigger picture question of how all this fits together in a world where there's vertical separation, long-term policy objectives, what we want to happen with collectively how these batteries play out, or any other emerging technology, the impact it has on the market, how the regulation fits in.

MR SPENCER: The regulation right across the whole industry, not just the --

MR RUSS: Yeah, and the pricing obviously.

MR SPENCER: Yeah, so how it all joins together from, you know, EA to Comcom to everybody who's interested.

MR RUSS: It's actually probably a good time to put -- sorry Gareth again, Gareth and Craig who's been noticeably quiet today. Any observations from you guys about what we've characterised the problem from how it presents itself to the Commerce Commission, anything you would add to that, or if we were to take that away and work up as what we're doing; any concerns, observations?

MR GARETH WILSON: Yeah, I can go first if you like. No particular concerns. In terms of observations, I found the discussion very interesting. The sector, as we all know, has gone through quite a lot of unbundling of formerly bundled services over decades in fact. What I heard a lot of today was the merits or otherwise of further unbundling of services to facilitate competition in markets that, yeah, as has been pointed out, are not yet in existence but they're emerging in some sense.

Yeah, so from a policy perspective we're very interested in whether there is a case to be made for further unbundling. I'm not aware of anywhere in the world that has established markets. I know that, you know, we read about stuff in the New York State and they're trying to construct platforms that would allow competition in some of these emerging distributed energy-type services. Yeah, so I'm very interested in on-going discussions about this, but very comfortable with where the conversation's got to today I think in terms of the IMs.

MR RUSS: Thanks Gareth. No expectations if there isn't anything. Any comments EA?

MR EVANS: Probably cost allocation methodologies are something that I, like WACC, would want to stay a long way away from.

MR RUSS: More interested in pricing.

MR EVANS: But I just wonder if -- like the conversation has been a lot around how particular aspects of the IMs work around cost allocation, it seems that there's concerns from some quarters about how they do work, maybe because there's not an appreciation of how they do work because they're pretty complicated. But there sounds to be like, yeah, a general concern about what the future will look like and how we operate in it, and with different relationships to co-ordinate with distributors and retailers and people who aren't at all participants at all.

So that narrow question about whether some party's advantaged or not by a current setting of the rules is to me, yeah, that's a nice thing to talk about and you want to get it right. But, yeah, it seems to me there's a bigger question around whether the interactions and relationships and so forth and the co-ordination issues are -- I don't know if they're dealt with through the input methodologies, probably more in market arrangements that the Authority's responsible for, but I think that's something that everybody seems to be probably thinking about. And we are too, the Authority of course. And also we're thinking about the intersection or interface between the IMs and everything else the Commerce Commission does and what we do. So that's probably my main thing I'll walk out of here today with.

MR RUSS: Ralph, I keep on grouping you together. Is there any specific comments you'd like to make on behalf of your members in terms of this topic?

MR MATTHES: No, but thank you very much for a very informative workshop, I've learned a lot. Sort of my take-out from here is there is a lot of value for consumers and New Zealand Inc probably down the road in terms of emerging technologies, and the challenge really is how do we make the most of it. That's about all.

MR FLETHER: I'm picking up from the gentailers that there's probably a need for ENA to better explain what incentives we currently have under the current framework, and maybe I'll try and speak to Nathan about coming to your group to do that, both in terms of the cost allocation and the incentive.

MR RUSS: No obligation but either Pioneer Generation or TrustPower any -- haven't heard anything specifically from you guys, but any --

MR GRANT SMITH: I think our concern at the moment would be we've got 25 embedded generators who are under threat of losing the ACOT mechanism which was brought in in a policy environment (inaudible) rules, and it seems to us that I guess they would want to see the same opportunities as a battery, you know. So getting some transparent thing that you can actually respond to rather than go and find it. So you go into an individual network company to try and get a price, so it would be better if there was an environment where you could respond to a request for services.

MR RUSS: That's an excellent point, isn't it, like the focus on batteries and how they can work, and then you've got almost unwinding of any incentives potentially for distributed generation which in some ways provides even -- same service is batteries and more.

MR GRANT SMITH: They're sunk and marginal cost and --

MR RUSS: And they're already there, yeah.

MR GRANT SMITH: -- they're there.

MR TIPPING: Yeah, I couldn't agree more actually, our plant had been serving that network support function for decades, so it's just a matter of getting the right framework in place to be able to continue that one and compete with everything else that may perform the same function. Jess, do you have a comment?

MS BEVIN: Just you talked about sort of there being a transition period and then going into the longer term, and I think that's really important and a useful thing to keep in our minds when we're sort of discussing this. But one thing that will pervade that is how you define the regulated service, and it still seems like there's a little bit of clarity lacking in that respect, and it's going to be something useful for further discussion just to get that sort of a bit more certain I guess.

DR GUNN: Just one specific question on the regulated service, that there's been a bit of discussion. Sort of skirted around it is the question of how important a control dimension is and where -- there's sort of a spectrum of control by the EDB of the load through various arrangements, could be direct or it could be through contractual, or it could be -- like the free batteries example. Free batteries could be just given to the consumer along the lines more like scenario 2 where it has an indirect effect on load but it might be positive, it might be negative, you don't really know, and it's just that the income associated with that -- which is unregulated -- is nil.

But then there's a sort of a spectrum of control potentially through direct physical control versus contractual arrangements, is that to what extent -- we haven't really talked too much about how important the control dimension is and where that sort of starts and stops to some of the question around the conveyance service. So it would be interesting just to think about whether there is any other aspects of the dimensions that we thought to be important and helping to think about the nature of conveyance, as to whether that's something that we could provide more guidance on would be helpful, whether there's some clarity there. So it might be useful either in, out, for the avoidance of doubt provisions in the IMs that might deal with specific things.

So I think that would be helpful for us is that that line service definition one is problematic, what guidance can we give on what is conveyance.

MR RUSS: We've heard a lot from most people. We'll just finish my theme of just hearing -- Lynne, is there any observations you have sort of on ENA or on behalf of the smaller EDBs you sort of sometimes represent in other forums?

MS TAYLOR: Yeah, the only comment I think that is relevant is we talk about emerging markets and new markets, and I think we just need to be aware that they won't all emerge at the same rate, they're unlikely to emerge at the same rate across --

MR RUSS: Geographically, yeah.

MS TAYLOR: Yeah, geographically. So we talk about transition, but that transition may take longer for some than others. So from a regulatory perspective I think we'll need to be able to accommodate that.

MR RUSS: Thanks Lynne. John, anything Smart Grid Forum going forward, potential pieces of work, solve our problems for us?

MR HANCOCK: No, one, it's more of a personal observation actually; I do like the way the Commission's approached this with a sort of far more open book, this very open approach to problem definition within the industry, the opportunity to table that in the areas the regime needs to change. And this stage of you laying out how the regime currently works so patiently. What I'm hearing today is that's still not very well understood even by quite expert people. It seems to me a lot of people don't understand how revenues are determined and what the relationship with costs is -- because there is a relationship, it's got a direct relationship -- and nobody understands IRIS, that's absolutely clear.

MR RUSS: Some of us like to think we do.

MR HANCOCK: I mean while you were summing up the thing that occurred to me, this is around monetising the value of new technologies to support networks in a way that alternative technologies and management practises can respond to if you wanted to summarise it. And so to try and unpack how the regime does that -- which is actually an action John Hamill has for me on the forum -- would be very helpful. You might even want to do a dry run of it in this process which we could then include in some of the Forum's work which will hit a much bigger less expert audience, but it wouldn't be a bad (inaudible). Happy to help of course, but I mean this has been a very good process I'd say, it's extremely constructive, not adversarial.

MR COATES: Can I just quickly add to that and say when you go into forums, things like (inaudible) and even talking directly with vendors around these new products, you end up having to have that conversation.

MR HANCOCK: Yeah.

MR COATES: You have to explain the whole electricity industry and how it works so that they can actually understand that you're not evil, because that's their starting position, you're the enemy. So, yeah, it takes a good hour or so just to warm up.

MR NICHOLLS: Can I ask a question of Gareth, because I think you rightly picked up, I think it's a point that Nathan was chewing on throughout the day, which is at a high level some of this is about forcibly unbundling the EDBs further. And so that was a good observation to make. I guess my question is whether MBIE has a policy position whether that's a good thing or not.

MR GARETH WILSON: Not as of now but we're watching with interest, I suppose, to see if there is a case for it. There was a case, or deemed to be a case back in 1998, there was a forced legal, you know, ownership separation of line and energy, which has been subsequently relaxed quite a lot. Interestingly nobody kind of mentioned that today I think -- no, there was reference to Part 3 of the industry (inaudible), but, yeah, like I don't think I heard anything today that said there was a compelling case to do so, but, you know, it's certainly a question of interest.

MR RUSS: Yeah, I was quite surprised when the talk about ring-fencing come up and the obvious thing they're ring-fenced from not doing at the moment, which has been relaxed, didn't get mentioned too much.

So final opportunity for any final words.

MR CAIN: Just one thing to say is I think it's really good that Contact and the other retailers are involved in this. I think it was a good idea to circulate that work last week. You know, as you said, Nick, this has morphed from kind of a concern about whether or not the IMs will fit the purpose from a distributor's point of view, into a debate about, you know, the future in the market and it sort of in some ways been characterised as a play for the market. But maybe not quite yet.

I think from our point of view we very much understand that thinking, and in the long-term it sort of feels like that's a more natural place for us to head. In the short-term it's just a question whether it's -- what's the lesser of two evils I guess.

MR RUSS: Yeah, I think this whole process to date, probably some of the overriding success is the engagement of probably more stakeholders than had traditionally been. I particularly thank the guys on the retail side for taking the time, and it's a lot of time and effort to invest in getting up to speed with this regime.

MR SPENCER: Sure is.

MR RUSS: We've certainly been trying to do our part and we'd continue to offer that to anyone really that wanted to explore more. So, you know, we've been so relying on Ralph historically to do a lot of the heavy lifting, so I think it's been really helpful the Retail Association New Zealand -- I think that's the right acronym -- I think that's a great initiative and helps us have another body, has a slightly different perspective on it as well.

So I'd just like to attend everyone for attending today and the guys for pulling this together. A lot of hard work and effort went into producing that original consultation paper back in November and I think it's proved to be quite useful. The topic's somewhat morphed, but I guess we've had everyone in the room that's going to have a key opinion about this today just about, so it helps us understand where we need to take this in order to work up to a Draft Decision.

As I said earlier, once we receive submissions on this we will update on the process and let everyone know about any potential further steps and what information we may or may not need, or any further dialogue we have before we move on to a Draft Decision. Does anyone know if we won the cricket?

MS CASEY: Yes, we did.

MR RUSS: Perfect. Thank you very much everyone.

WORKSHOP CONCLUDED